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STORAGE

ASTRONOMICAL OBSERVATIONS

MADE AT THE

OBSERVATORY OF CAMBRIDGE

BY

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IN THE UNIVERSITY OF CAMBRIDGE,
AND LATE FELLOW OF TRINITY COLLEGE.

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FOR THE YEAR 1836.

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ERRATA.

In the Volume for 1835.

Page xxxvii. In the Table, Zenith Distance of β Leonis *for* 26°.43′ *read* 36°.43′.

.... of Regulus *for* 29.27 *read* 39°.27′.

These two stars should be ranged accordingly.

p. 133. The Meridian Ephemeris for Pallas 1835 is in part calculated erroneously in the Nautical Almanac. When corrected, the comparison with the observed places should stand as follows.

Day. 1835.	Observed N.P.D. of Pallas.	Seconds of Tabular N.P.D.	Errors of Tables.
	° ′ ″	″	″
June 10	64 . 17 . 39,07	57,30	+ 18,23
13	64 . 19 . 5,23	18,89	+ 13,66
18	64 . 27 . 38,99	46,96	+ 7,97
20	64 . 33 . 7,72	17,25	+ 9,53
23	64 . 43 . 37,39	44,14	+ 6,75
25	64 . 51 . 59,63	67,03	+ 7,40
29	65 . 12 . 0,43	7,12	+ 6,69
30	65 . 17 . 42,16	45,41	+ 3,25
July 1	65 . 23 . 34,99	38,21	+ 3,22
2	65 . 29 . 42,57	45,50	+ 2,93
3	65 . 36 . 6,20	7,20	+ 1,00
4	65 . 42 . 42,97	43,19	+ 0,22

In the Present Volume.

p. xiv. Line 15 *for* variation of R.A. *read* apparent motion.

p. xix. Line 10 *for* more *read* move.

p. (8). In the observation of Vesta April 25, the minutes of Wire vii should be 36, of concluded Transit 35, and of apparent R.A. 37. The error is corrected in the Table of R.A. p. 122.

p. (12). Observation of α Serpentis May 6, the minutes of Wire vii, of concluded Transit, and of apparent R.A. are too great by 1^m.

p. (69). The adopted rate Oct. 31 should be −0,21.

p. (86). The Sidereal Times occupied by the Passage of the Moon's Diameter across the Meridian are not corrected for defect of illumination. The seconds should be 38^s,33, 33^s,24, and 11^s,60, respectively.

p. 6. The correction for defect of illumination of Moon's N.L. April 2, is more correctly −1″,74. The alteration is made in the Catalogue of observed N.P.D. p. 117.

p. 98. The Vertical Diameters of the Moon are not corrected for defect of illumination. When the correction is applied, they will be as follows.

	′ ″		′ ″		′ ″
April 2	32 . 25,74	Aug. 21	32 . 39,03	Dec. 20	29 . 47,71
30	32 . 54,33	27	32 . 1,60	24	29 . 27,82

p. 121. Greenwich Mean Solar Time of Transit of Limb of Mars July 26, *for* 20.32.30,2 *read* 20.31.30,3.

PREFACE.

The care of the Cambridge Observatory devolved upon me Feb. 2, 1836, in consequence of my election to the Plumian Professorship, and on March 24 observations were resumed, having been necessarily suspended since Dec. 12, 1835, by the regulations for filling up the vacancy of the Professorship, and the delays unavoidable on entering upon a new situation. I determined at once upon carrying on the plan, (already acted upon for eight years,) of directing the principal work of the Observatory to observations of the Sun, Moon, and Planets; considering that the reasons which induced Professor Airy to adopt it, founded on the paucity of this kind of observations, and the need of them for correcting the tables of the motions of these bodies, had not ceased to exist: and that though the same system of observations would no doubt be continued under his superintendence at the Greenwich Observatory with greater efficiency than the means here provided would admit of, considerable advantage might still be expected from independent observations made with different instruments and in different situations, both in supplying omissions occasioned by the uncertainties of the weather, and in furnishing means of judging, by comparison of those made cotemporaneously, how far individual apparent errors of the tables are to be attributed to the unavoidable errors of observation. I considered also, that besides the practical utility for nautical purposes, of giving increasing accuracy to the Tables of the Sun, Moon, and Planets, the more remote object, which a long continued series of these observations may be expected to answer, of verifying the exactness of the assumed law of gravity, was of the first importance as regards the progress of physical science, and one in which the Observatory of this University might be appropriately engaged.

In following up this plan, I have adhered closely to the methods both of observing and of reducing observations, which I found in practice on coming to the Observatory, trusting that this course will be considered to be justified by the ability and scrupulous attention to accuracy with which these methods were canvassed before they were adopted by my predecessor, which the inspection of the MSS. he left at the Observatory has enabled me duly to estimate. I have also availed myself of any facilities for computation by calculated manuscript tables and skeleton forms, which I found ready prepared, after in every instance verifying the constants contained in them. By these means the present Volume of Observations is larger than it would have been possible to produce in the same time, had I pursued a more independent course; and yet with all these aids it has occupied so much time, that excepting the interval necessarily devoted to the Plumian Lectures, I have had none for any other scientific pursuit.

The rough observations, the elements of their calculation, and the final results, are exhibited in this Volume as in those preceding it, with but few alterations in the mode of printing. The reduction of the observations has been carried to the same extent as in former years. All the calculations have been carefully examined: those of the Transit Observations almost exclusively by myself, and in great part those of the Circle Observations: the reductions of the other observations I either calculated or examined. My aim has been to ensure value to the work by accuracy of reduction and correct results; and this end, it is hoped, has been attained, even where in some instances the calculations might either have been spared, or abbreviated, had my experience in the business of an Observatory been greater. I have entered into a full detail of the principles of the Instrumental corrections and of the computations generally, in the Introduction, with the view of giving the means by the explanations there contained and the notices in the body of the work, of verifying, if required, any part of the calculations.

Nearly all the Transit Observations were made and reduced by Mr Baldrey. The other assistant, Mr John Glaisher, who was chosen in March 1836 to succeed his brother, removed to the Greenwich Observatory, has been occupied with the Circle, and with the reductions of the Circle and Equatoreal Observations.

J. CHALLIS.

Observatory, Cambridge,
October 26, 1837.

CAMBRIDGE OBSERVATIONS.

INTRODUCTION.

Description of Instruments and Methods of Observing.

The *Transit* Instrument was constructed by Dollond in 1824. Its focal length is nearly 10 feet, and the aperture of the object glass is 5 inches. It is supported on very massive stone piers, and the pivots of the axis, which are of bell metal, turn in brass Ys which have the usual vertical and horizontal adjustments. The wires are of silk from the silk-worm's ball, subtending each an angle of less than 1″, their thickness being estimated at less than $\frac{1}{2200}$ of an inch. The illumination of the field of view is effected by a lamp placed at one end of the axis of the instrument, the light of which is reflected down the axis of the telescope. Occasionally, when very faint objects are to be observed, an eye-piece is used furnished with an apparatus for illuminating the wires. The aperture of the object glass can be contracted to 4, 3, or 2 inches, but the whole is generally employed. The magnifying power commonly used is about 140.

In addition to the seven fixed vertical wires, there is one parallel to them which is moveable by a micrometer screw with graduated head. This has not been used in 1836 for any other purpose than that of finding the error of collimation. There were also two horizontal wires, serving as a guide to the observer for taking the transits at the same part of the field. These were accidentally broken in the autumn of the year without any injury done to the rest of the wires, and as one was immediately replaced and was sufficient for the purposes of observing, no change was made in the system of wires. The present system was fixed at the end of 1832. I have made no alteration in its position; nor have I moved the screws for the vertical and horizontal adjustments of the axis.

To counteract any effects from the Sun's heat, the instrument is protected with a covering of oiled silk: and before and after the Sun's passage, the South shutters of the Transit Room are closed, so as not to allow the Sun to shine on the piers.

The clock used for the Transit Observations was constructed by Hardy, and has Hardy's escapement. Its beat is remarkably loud and distinct. The minute hand requires to be put forward from time to time, as the clock has a small losing rate.

It is the practice in observing to look at the clock-face and take a second before the transit over the first wire, and then to count by the beats and not look again at the clock till the object has passed all the wires. By this means any error in counting and the amount of it will generally be discovered, and a memorandum is made accordingly. The number of wires which the error affects is ascertained by a comparison of the intervals. Sometimes there is reason to alter the seconds of some of the wires when no memorandum has been made of an error in counting, and occasionally a single wire appears to be 1^s wrong. The alterations are then made solely from a comparison of the intervals. All alterations of the seconds are carefully mentioned in the notes to the *Transits as observed*. When the observer is prevented taking a second from the clock, either from being too late or from the quick succession of two objects, he records the difference between his counting and the clock indication at the end of the observation, and this difference is mentioned in the notes to the observed Transits, but the tabulated times of transit over the wires are those which would have been written down if the second had been taken immediately from the clock.

The *Mural Circle* was constructed by Troughton and Simms, and was mounted in October 1832. The divisions were cut by Mr Simms, after the mounting, in November of the same year. It is 8 feet in diameter, but in all other respects similar to the Mural Circles of the Greenwich Observatory. The limb is connected with the center piece by 16 spokes, or hollow cones; and these are connected with each other at about the middle of their lengths by bars forming a circle whose diameter is nearly half that of the exterior circle. The limb was cast in several pieces, which were afterwards united by the process technically called *burning together*, and there is reason to think the connexion of the parts is as perfect as if the whole had been cast at once. The axis on which the circle turns is a hollow cone, 4½ feet long, passing through a very massive stone pier. The circle is on the eastern side of the pier, and both bearings of the axis are on the same side of the circle. At each bearing the axis is armed with a steel ring, which turns within a steel cylinder. A considerable part of the weight at the bearing of the larger ring or that near the circle, is supported by lever counterpoises. The divisions of the limb are on the external edge, so that the microscopes by which they are read, which are six in number and disposed at equal intervals, are in the same plane as the circle. The microscopes are attached to the stone pier by brass supports, the height of which above the point of attachment is intended to supply a thermometrical expansion nearly equal to the upward expansion of the central support. The eye-pieces of the microscopes are fitted with micrometers, by which the intervals of the divisions are subdivided into seconds, and by estimation into tenths of seconds. The telescope is carried by a steel rod passing through the hollow conical axis, and its position on the circle is secured by frames which are clamped to the limb at both ends of the telescope, one being as near as possible to the object-glass-cell and the other as near as possible to the wire-frame. At the focus of the eye-piece, besides the five vertical wires, there is one fixed horizontal wire, of spider's web, adjustible by a screw so that an equatoreal star shall move exactly along it, and parallel to this another wire, moveable by a micrometer screw. The instrument is fixed or moved slowly by clamps, which act immediately on the limb by tangent screws, and are so disposed about the circle that they can be severally used according to the convenience of the observer. There were originally five, but as the two uppermost seldom or never came into use, these were taken off to diminish the friction.

To prevent any injurious effect from the Sun's heat in mid-day observations, a wooden screen is provided, by which all the parts of the limb exposed to the Sun's rays are shaded. That part of the screen which is opposite the interval between the tropics, consists of a sliding board with a hole a little larger than the object-glass of the telescope, to admit of directing the telescope to the Sun and Planets when the screen is let down.

The divisions of the Circle were examined by Mr Airy in 1833, 1834, and 1835, and the particulars of the examinations are given in the Introductions to the Volumes of Observations for those years. The results, it is stated, appear to indicate an error following a law, of very small amount, but more considerable than the anomalous errors. No additional examination has since been made.

The Clock used in the Circle Room is one of Molyneux's. As the Transit and Circle Rooms are adjacent, and the beat of the clock Hardy is very loud, the two clocks admit of immediate comparison.

The following is the mode of observing with the Circle. The instrument is set for observing any object whose North Polar Distance is known approximately, by means of a pointer fixed to the stone pier, or by a small circle attached to the telescope, which is also sometimes used for checking the pointer setting, especially in observations of the planets; but in general the setting is performed by the pointer alone. For convenience in taking the observations, the pointer is placed a few degrees below the northern extremity of the horizontal diameter of the Circle, as its position in other respects is indifferent. The graduation of the Circle increases in passing from the southern part of the limb through the highest point to the northern: and consequently the setting angle of the pointer for a direct observation, is a certain angle increased by the approximate N.P.D. of the object, and that for a reflexion observation, another constant angle diminished by the N.P.D. These two angles, which depend upon the position of the Telescope on the Circle, are obtained with sufficient accuracy by means of one direct observation of a known star, and the approximate latitude of the place of observation. When a *double* observation of a fixed star is to be taken, the Circle is first of all set and clamped for the reflexion observation, and the position of the basin of mercury is determined, in the day-time, by looking at the reflexion of the light passing through the eye-glass of the telescope, and in the night-time, by looking at the reflected light of the lamp which illumines the field of view. The divisions are then bisected by the cross-wires of the microscopes, which are either read off at the time, or may be left to be read after the direct observation. This completes the preparatory arrangements. The star in its passage is bisected by the micrometer wire a little before it reaches the middle vertical wire, when this is possible; the Circle is then immediately unclamped and turned to be set for the direct observation; it is then clamped again with that clamp which will be most convenient in the next operation, which is, to bring the star to the fixed wire by the tangent-screw. If nothing occurs to cause delay, the second bisection is made a little after the passage of the star across the middle wire. When, as it often necessarily happens, either observation is taken at a considerable distance from the middle wire, this circumstance is noted for the purpose of applying a correction for curvature of path in the computations. Immediately after the direct observation, the microscopes are read if they were not read before, the divisions are again bisected and microscopes read, the eye-piece micrometer is then read, and lastly the states of the barometer and of the free and attached thermometers are noted down. This completes the observation.

For observations of the Sun, the instrument is prepared by setting for one of the limbs, bisecting the divisions, and reading off the microscopes. The limb, a little before its passage across the middle vertical wire, is touched by the micrometer wire: the Circle is then unclamped and turned by hand to bring the other limb near the fixed wire, and after clamping again, this limb is brought by the tangent screw to be touched by the fixed wire exactly. The rest of the operation proceeds as before.

In taking a *single* observation, the object, if a star, is merely brought by the tangent screw to be bisected by the fixed wire at its passage across the middle wire. In observing the planets, when their apparent discs are of sensible magnitude, one limb (which in the case of Venus is that that appears most fully illumined,) is brought to the fixed wire, and the other limb, if illumined, or the extreme illumined part of the disc, is touched by the micrometer wire. When the apparent disc of a planet is very small, it is bisected like a star. If two stars are to be observed of nearly equal

N.P.D., and follow in quick succession, one is bisected by the fixed wire and the other by the micrometer wire. In this way several stars of nearly the same N.P.D. may be observed in succession, the micrometer being read after each bisection of a star by the micrometer wire. A similar method is adopted in observations of the Moon. The limb is brought to the fixed wire as it passes the first vertical wire, and is touched by the micrometer wire at its successive passages across the other wires, the micrometer being read after each contact. Sometimes both the Moon's limbs, when sufficiently illumined, are observed: in which case the microscopes must be read off, or divisions bisected, previous to the observation. One limb is observed at three wires, the instrument is unclamped and turned by hand, and the other limb is then observed at the remaining two.

In every instance where an observation is taken at a considerable distance from the middle vertical wire, the distance or time is noted for the purpose of applying a correction, if sensible, for curvature of path, as also, in the case of the moving bodies, for change of N.P.D. When stars, such as Polaris and δ Ursæ Minoris, whose curvature of path is very considerable, are not observed very near the time of their meridian passage, the time by Molyneux is recorded and converted into true sidereal time by a comparison made with Hardy soon after the observation.

It is to be observed, that for the sake of uniformity all micrometer readings increase as the micrometer wires move *towards* the graduated micrometer-head. The six microscopes have their micrometer-heads all directed the same way relatively to the graduation of the circle. That at the northern extremity of the Circle's horizontal diameter has the micrometer-head *downwards*. Also, when the telescope is in a horizontal position, with the object glass looking South, the micrometer-head of the eye-piece micrometer is downwards.

The following is the description of the *Equatoreal*, as given in the Introduction to the Volume of Cambridge Observations for 1832.

"The Equatoreal was erected in May 1832, by Mr Thomas Jones. The support of the lower or southern pivot is a stone pier; that of the upper or northern pivot is an iron frame-work, about 3 feet long, attached to a stone pier. The lower pivot is hemispherical, turning in a steel cup, which is attached to a solid brass plate, moveable by screws for the adjustments in azimuth and altitude: the upper pivot is cylindrical, turning in a Y, which is mounted with a ball and socket joint, so as to allow a very small motion. The polar axis consists of four brass cylinders, each $3\frac{1}{2}$ inches in diameter, and about 6 feet long: their ends are fixed to two frames of brass, in the centers of which are the pivots above mentioned, and the distance between each pair of cylinders, from center to center, is 12 inches. The eastern pair of cylinders (supposing the instrument placed with its telescope in the meridian) are connected by a cross bar at about 6 inches above their center, and the western pair are similarly connected. On these cross-pieces are the Ys which support the pivots of the declination circle, and which are mounted so as to allow them to turn in both directions through small angles. The axis of the declination circle consists of two cones, whose bases are connected by a cylinder, through which the telescope passes, and on which the conical spokes of the circle are fixed. The telescope is firmly connected with the limb of the circle. The circle consists of two flat rings, containing the telescope between them, and connected by bars across. One ring bears the graduations to every $5'$, which are subdivided to $1''$ by micrometer-microscopes, carried by conical arms attached to one pair of pillars; the other ring is grasped by the clamp to which the tangent-screw is attached. The hour circle is attached to the frame carrying the lower pivot, and is graduated on the edge to 20^s of time: by means of two micrometer-microscopes firmly attached to the stone pier, the graduations are subdivided to $0^s,1$ of time. The diameter of the declination circle is 3 feet, and that of the hour circle 2 feet: the length of the telescope is 5 feet. In the eye-piece of the telescope are a double-wire micrometer, one equatoreal fixed wire, and five meridian wires."

The graduation of the declination circle of this instrument was found by Mr Airy to be faulty, and a careful examination of the greater part of it was gone through in 1834 and 1835. For an account of the method of conducting the examination, and for tables of corrections to the divisions, see the Introduction to the Volume of Cambridge Observations of 1834, p. li., and that to the Volume of 1835, pp. xlvii. and lv.

The observations with the Equatoreal, contained in the present volume, are differences of R.A. and micrometer-measurements of differences of N.P.D., which were all taken without any movement of the declination circle, or of the instrument about its polar axis, and consequently without the necessity of reading off any angles from the declination circle.

The clock used with the Equatoreal was made by Graham, and has the dead-beat escapement and gridiron pendulum. It is compared with the Transit clock by a sidereal chronometer, and sometimes by a solar chronometer.

TRANSITS AS OBSERVED.

The first division of the tabular portion of the work is allotted to the Transit Observations. The left-hand pages record the transits as they were observed, with no other results of calculation than the corrections necessary in some instances for reducing the mean of the observed times to the time of transit over the mean of all the wires.

The *first column* contains the day of the month, supposed always to commence with the Sun's meridian passage.

The *second column* has the names of the objects observed. All the stars observed with the Transit (with the exception of three, which are designated by their approximate N.P.D.) are contained in the Nautical Almanac, and the names here given them are the same as in that work. In the second column are also stated (in small type) such circumstances of the observations as could be expressed briefly: which are principally those depending on atmospheric causes. Longer remarks, and such as relate to mistakes in observing, are introduced at the bottom of the page. To give an opportunity of judging of the weight due to individual observations, it was thought right to omit the mention of no circumstance which seemed in any way to affect an observation, especially when the object observed was the Sun, Moon, or a planet.

In observing a double star, as Castor, the brightest is taken.

The *seven succeeding columns* contain the times of passage, by the Transit clock, over the seven wires. The hour and minute in the seventh of these columns always refer to the wire last observed. When, as not unfrequently happens, the times of transit across all the wires cannot be observed, a correction is necessary for reducing the mean of the observed times to the time of transit over the mean of all the wires. This is effected by adding (with the proper sign) to the mean of the observed times, the sum of the distances in time of the omitted wires from the mean of all, divided by the number of observed wires: as may be readily shewn thus. Suppose, for instance, four wires to have been observed. Let m be the required mean; $m+a$, $m+b$, $m+c$, $m+d$, the observed times; and $m+e$, $m+f$, $m+g$, the omitted times. Then, assuming the observed times to be correct,

$$a+b+c+d+e+f+g=0.$$

$$\text{Hence,}\quad m=\frac{(m+a)+(m+b)+(m+c)+(m+d)}{4}+\frac{e+f+g}{4}.$$

And so for any other case.

The distances of the wires from the mean, employed in this volume for the above-named corrections, were deduced in 1833 from 12 observations of Polaris and 19 observations of δ Ursæ Minoris, between January 4 and February 27 of that year. In the present year (1837) the intervals have been again inferred from 26 observations of Polaris and 9 of δ Ursæ Minoris, taken between the months of March and October in 1836; those only being used in which these stars were observed at all the wires. The result so far agreed with the previous determination of 1833, as to shew that no sensible error has been introduced by adopting that determination in the observations of 1836. The corrections to the mean of the observed wires are arranged in the *tenth column*, and the following is the table used in calculating them. The wires are distinguished by the letters *A*, *B*, *C*, *D*, *E*, *F*, *G*; and stars above the pole pass them in this order when the illuminated end of the axis is East.

Distance in Time of each Wire from the Mean of all.

	For Equatoreal Stars.	For δ Ursæ Minoris. Declination = 86° . 35′ + *n*″.	For Polaris. Declination = 88° . 25′ + *n*″.
	s.	m. s. s.	m. s. s.
A	− 40,478	− 11 . 19,47 − *n* × 0,055	− 24 . 27,73 − *n* × 0,261
B	− 26,976	− 7 . 32,73 − *n* × 0,037	− 16 . 17,13 − *n* × 0,173
C	− 13,469	− 3 . 46,00 − *n* × 0,019	− 8 . 7,60 − *n* × 0,086
D	+ 0,005	+ 0,08	+ 0,18
E	+ 13,632	+ 3 . 48,73 + *n* × 0,019	+ 8 . 13,47 + *n* × 0,088
F	+ 26,959	+ 7 . 32,43 + *n* × 0,037	+ 16 . 16,47 + *n* × 0,173
G	+ 40,328	+ 11 . 16,93 + *n* × 0,056	+ 24 . 22,30 + *n* × 0,260

Besides the cosecant of N.P.D., by which the above numbers for equatoreal stars are multiplied when the N.P.D. is not very small, a factor is used for the Sun and Planets, which is deduced from the horary variation of their Æ. given in the *Meridian Ephemeris.* The factor for the Moon takes account of the variation of Æ. as seen from the place of observation, and is calculated from the expression

$$\frac{3600 + I}{3600} \times \frac{\textit{sin Moon's geocentric Z.D.}}{\textit{sin Moon's apparent Z.D.}} \times \textit{cosecant of N.P.D.},$$

where *I* is the increase of the Moon's Æ. in passing over 1^h of terrestrial longitude, given under the head of Moon-culminating Stars in the *Nautical Almanac.*

The first limb of Jupiter and the first limb of Saturn's Ring are usually observed at the wires *A, C, E,* and *G*; and the second limbs at the wires *B, D,* and *F.* No correction is applied to the means of the observed wires in these cases, as the mean of each of these sets coincides very nearly with the mean of all the wires.

The *eleventh column* contains the initial of the observer's name. The observations marked *C* are by myself, those marked *B* by Mr Baldrey, and those marked *G* by Mr Glaisher.

The space immediately below the columns contains notices of the position of the instrument and the order of the wires, together with the times of reversing and levelling it, and of putting forward the minute-hand of the clock.

CALCULATION OF APPARENT RIGHT ASCENSIONS.

The concluded times of transit over the mean of the seven wires, as given by the clock, are placed in the *first column* of the right-hand pages*. The succeeding columns contain the elements of the calculation by which the Apparent Right Ascensions are inferred from these times; which is done by applying corrections for *Error of Collimation, Level Error, Meridian Error,* and *Clock Error.* The methods of obtaining these corrections will here be severally stated in the order of their application.

1. *Error of Collimation.*

A wooden cross in the form of X, placed so that the vertical micrometer-wire can be brought to bisect its acute angles, serves as a southern mark for determining the error of collimation. It is fixed on the tower of Grantchester church, at the distance of about 2½ miles, and its angular distance West of the meridian is about 14″. The determination of collimation error by one mark, requires, in strictness, that the imaginary axis about which the instrument revolves should coincide with the same line in space, and the middle point of the axis with the same point in space, before and after reversion. By using both a northern and a southern mark, the error arising from any change by the reversion in the position of the middle point of the axis is got rid of in the mean of the two results, because the space passed over by the micrometer-wire in measuring the interval between the directions of collimation, is as much increased by this deviation in one case as it is diminished in the other. Accordingly, two marks have been always employed. Instead of a fixed northern mark, which could not be obtained, a small transit instrument is put up as a horizontal collimator in the northern opening for the shutters, and the micrometer-wire is applied to a selected point of the image of one of its wires. This is found in practice to answer well enough the required purpose.

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* The transfer of this column to the right-hand page is the only considerable alteration I have thought proper to make in the printing of the *Cambridge Observations;* and this, it is confessed, was done rather to give the page an appearance of being more uniformly filled, than for any decided advantage. The arrangement, however, allows of space for inserting short notices of circumstances of observation in the second column of the left-hand page, which may be of some advantage.

It is to be observed, that in what follows, as in the tabular part of the work, the error of collimation is considered *positive* when it requires a *positive* correction to be added to the observed time of transit of an object above the pole.

In the instrumental process for finding the error, the micrometer-wire is applied to the middle wire *D*, as well as to the two marks, and the immediate result is to determine the error of collimation of *D*. A correction is therefore required for deducing the error of collimation of the mean of the wires. In passing the wires in the order *ABCDEFG*, the position of *D* is *beyond* the mean of the wires by $0^s,005$ or $0'',08$. Hence, when the illuminated end of the axis is East, stars above the pole reach the mean of the wires *before* reaching *D*, and the correction to be added to the error of *D* is $+ 0'',08$. When the illuminated end of the axis is West, stars come first to *D*, and the correction to be added is $- 0'',08$.

The effect of diurnal aberration is the same as that of collimation error. Its amount in this latitude is $0'',18$; and as it throws the apparent positions of stars towards the East, and consequently *retards* their coming to the meridian when they pass above the pole, the error on this account is $- 0'',18$ in both positions of the instrument. Combining this with the foregoing correction, the quantity to be added to the error of collimation of *D*, when the illuminated end of the axis is East, is $- 0'',1$, and when West, $- 0'',26$. The following is the account of the observations which I made in 1836, for determining the error of collimation.

March 21. 22^h. The Transit was reversed in the same manner as formerly. The cross was seen very well, but before the reversion it was a little unsteady. The wire of the collimator was remarkably distinct, and altogether the circumstances were favorable.

Illuminated End of Axis West.

	r
Mean of 6 readings, micrometer-wire touching *D*	24,035
.... bisecting South mark	25,537
.... bisecting North mark	26,054

Illuminated End of Axis East.

	r.
Mean of 6 readings, micrometer-wire bisecting North mark	21,921
bisecting South mark	22,606
touching *D*	24,026

Hence, Reading for line of collimation by South mark........ 24,072

.... North mark........ 23,988

Reading for true line of collimation........ 24,030

Reading for *D*........ 24,031

The apparent deviation of *D* from the true line of collimation is therefore insensible: and as the illuminated end of the axis was left East, the error of collimation of the mean of the wires, by what is said above, is $-0'',1$.

June 24. 6^h. I reversed the Transit in the usual manner. The cross and collimating-wire were well seen. No unfavorable circumstances. The account of the micrometer measurements is subjoined in full.

Illuminated End of Axis East.

	Micrometer-Wire touching *D*.	Micrometer-Wire bisecting Cross.	Micrometer-Wire on Wire of Collimator.
	r.	r.	r.
	24,160	22,637	26,677
	24,073	22,666	26,714
	24,166	22,663	26,662
	24,066	22,669	26,692
	24,161	22,653	26,698
	24,070	22,672	26,680
Means	24,116	22,660	26,687

Illuminated End of Axis West.

	Micrometer-Wire on Wire of Collimator.	Micrometer-Wire bisecting Cross.	Micrometer-Wire touching *D*.
	r.	r.	r.
	21,381	25,530	24,149
	21,377	25,570	24,039
	21,356	25,530	24,160
	21,372	25,564	24,046
	21,376	25,529	24,163
	21,356	25,560	24,050
Means	21,370	25,547	24,101

	r.
Hence, Reading for line of collimation by South mark	24,104
……… North mark	24,029
Reading for true line of collimation	24,066
Reading for *D*	24,108

The difference $0^{r},042$ measures the error of collimation of *D*; and as one revolution of the micrometer is found by micrometer observations of Polaris to be equivalent to $17'',06$, the error of *D* is $0'',72$. Now, the micrometer readings increase as the wire moves from the illuminated end; and stars above the pole enter the field of view of the telescope from the West, that is, in the present instance, from the illuminated end. Hence the reading for *D* is too great.

Hence, Error of collimation of $D = -0'',72$

Error of mean of wires... $= -0'',72 - 0'',26 = -0'',98$.

Oct. 3. 3^{h}. Transit reversed. The wire of the collimator was seen indistinctly before the reversion, and therefore two sets of measurements were taken. The cross was remarkably steady and distinct.

Illuminated End of Axis West.

	r.
Mean of 6 readings, micrometer-wire touching *D*	24,150
……… bisecting South mark	25,805
Mean of 12 readings, micrometer-wire bisecting North mark	18,817

Illuminated End of Axis East.

Mean of 6 readings, micrometer-wire touching *D*	24,152
……… bisecting South mark	22.692
……… bisecting North mark	29,691

Hence, Reading for line of collimation by South mark	24,249
……… North mark	24,254
Reading for true line of collimation	24,252
Reading for *D*	24,151

The difference is $0^{r},101$, or $1'',72$. As the readings increase in going from the illuminated end, a star entering from the West will come to the true line of collimation before it comes to *D*. The reading for *D* is therefore too great.

Hence, Error of collimation of $D = -1'',72$

Error of mean of wires... $= -1'',72 - 0'',10 = -1'',82$.

The above determinations are inserted in the space immediately below the columns of the right-hand pages.

The correction to the observed time of each transit is, in seconds of time,

$$\frac{1}{15} \times \textit{error of Collimation} \times \textit{cosec of N.P.D.},$$

the N.P.D. being considered negative when the star passes below the pole.

2. *Level Error.*

The numerical application of the foregoing correction is equivalent to making the line of collimation more in a plane perpendicular to the axis about which the Transit revolves. The next step is to make this plane vertical, or rather to give the means of applying numerically a correction by which the observed times of transit may be reduced to those which, *cæteris paribus*, would have been observed if the plane had been exactly vertical. This has always been done by applying a spirit-level, furnished with a cross-level adjustment, and with graduated scales for reading off the positions of the extremities of the bubble. The scales may be arbitrarily disposed, and frequently before the levelling are shifted to positions convenient for reading off, retaining afterwards fixed places during the whole of the operation. In the graduation of each scale the numbers increase in the direction tending *from* the middle of the bubble.

The process for calculating the level error is conducted on the following principles. Supposing the axis of the Transit to be in a horizontal plane, and its pivots to be exactly cylindrical and equal, let the reading of the eastern scale be a, and that of the western b. If the eastern end of the axis be now supposed higher than the other, the eastern reading will be increased by some quantity x, and the western as much diminished. Again, if the radius of the eastern pivot be greater than that of the western, the eastern reading will be increased by some additional quantity y by the consequent elevation of the east end of the axis, and by another quantity z

by the elevation of the east end of the level; and the western reading will be lessened by the same quantities. The eastern reading would thus be $a + x + y + z$, and the western $b - x - y - z$. Then, reversing the level, and supposing the bubble to retain the same size and form* that it had before reversion, the eastern reading will be $b + x + y + z$ and the western $a - x - y - z$. The excess of the sum of the eastern above the sum of the western readings, divided by 4, the number of readings, is $x + y + z$. It is the practice to reverse the level five times, and thus obtain six eastern and six western readings. The excess of the sum of the former above the sum of the latter, divided by 12, may be presumed to give the quantity $x + y + z$ with greater accuracy than by one reversion. If the Transit were in the reverse position, the quantity obtained by the same operations would be $x - y - z$, because the radius of the western pivot would then be the largest. The half of the excess of the first result above the second would give $y + z$; which, if it should be found to be negative, would shew that the pivot that was originally eastern is the smaller of the two. The ratio of z to y is plainly that of the cosecant of half the angle of the Ys of the level to the cosecant of half the angle of the Ys of the piers, which is nearly the ratio of 1,2 to 1,4. Hence, the value of z is readily inferred from the value of $y + z$, obtained as above. By proceeding on these principles, Mr Airy found the pivot at the illuminated end of the axis to be larger than the other, and determined the quantity z to be the fractional part 0,15 of the unit of the scales. (See *Cambridge Observations*, Vol. I. p. 30. and Vol. II. p. 50.)

When, therefore, the illuminated end is East, the level reading which measures the inclination of the Transit-axis to a horizontal plane, is obtained by *subtracting* 0,15 from half the mean excess of the eastern above the western readings, and when West, by adding it to the same. Should the results be negative, this would shew that, contrary to the original supposition, the east end of the axis is lower than the other. In all the levellings of 1836, these results are positive, indicating that the East end is the more elevated. The difference of heights appears to be greatest when the temperature is greatest, and varies in proportion to the change of temperature with a regularity so considerable, that I have ventured on one occasion (Dec. 23), when the bubble was too long to allow of levelling, to infer the level error from that of a preceding day, by applying a correction proportional to the change of temperature in the interval.

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* A chief obstacle in the way of the perfection of the Spirit-Level is, I am disposed to think, the change of *form* which the bubble is liable to from inequalities of capillary action between the fluid and the glass, independently of the change of its size arising from variations of temperature.

In consequence of the greater elevation of the East end of the axis, the plane in which the line of collimation moves deviates to the West, and stars above the pole, *cæteris paribus*, come to it *after* coming to the meridian. The level error requires, therefore, a negative correction to the observed time of Transit, and consequently has a negative sign attached, by the same rule as that applied to the error of collimation. As it appears (*Cambridge Observations* for 1834, p. xii.) that the unit of the scales answers to 1″,3 of space, the error as determined by the level, must be multiplied by this factor, to obtain the angle of inclination of the axis to a horizontal plane. The value thus finally arrived at, with the sign attached, is the Level Error inserted in the space below the columns of the right-hand pages.

The levelling is commonly performed on the Monday of each week, and from the beginning of the latter half of the year the practice has been to commence using the determination on the previous Thursday.

The numerical correction applied to the observed time of each transit, previously corrected for error of collimation, is, in seconds of time,

$$\frac{1}{15} \times \textit{level error} \times \textit{cosine of Z.D.} \times \textit{cosecant of N.P.D.},$$

the N.P.D. being negative when the star is below the pole.

3. *Meridian Error.*

When the corrections for the two preceding errors are applied, the observed times of transit are reduced to the times which would have been observed if the line of collimation moved in a great circle passing through the zenith but not through the pole. It is next required to correct for the deviation of this circle from the meridian; that is, to reduce farther the observed times to the times (by the clock) of passing the true meridian. This has generally been done by means of two or more transits of Polaris or δ Ursæ Minoris, alternately above and below the pole, and, with some few exceptions, consecutive. If the vertical plane in which the axis of the telescope is now considered to move, deviate to the *East* of the meridian on the South side of the zenith, circumpolar stars in passing below the pole will come to this plane before crossing the meridian, and in passing above the pole, after crossing the meridian. Hence, the interval from the inferior to the superior passage, inferred from the times of transit corrected for errors of collimation and level, will be greater than 12^h. This has been actually the case throughout the year 1836, shewing that the instrument has the position here supposed, that is, that the East end of the axis deviates to the N. of E.

Conceiving now the circumpolar star employed for the determination of meridian error, to have no motion in Æ., and the clock to have no rate, the excess of the above-mentioned interval above 12^h will be the time in which the star describes the portions of its small circle that lie between the plane of the meridian and the vertical plane of motion of the axis of the telescope. This time we will call T. The change of the star's Æ. and the clock-rate are taken account of by adding to the second of the observed transits, when two only are employed, the loss of the clock in 12^h, and subtracting the increase of the star's Æ. in the same time. The clock's loss has usually been inferred from the difference of the uncorrected times of transit of the same star or stars on two consecutive days, and the change of Æ. is taken from the *Nautical Almanac*. These corrections being attended to, the rule for obtaining T is, in all cases, to subtract the clock time (corrected for errors of collimation and level,) of the *inferior* transit from that of the superior, increasing or diminishing the latter by 12^h, so as to obtain a small positive remainder. This rule applies when the transits are not consecutive, provided the second be corrected as before in proportion to the interval between the two.

When three consecutive transits of either Polaris or δ Ursæ Minoris have been obtained, there is no necessity to correct for the rate of the clock or the change of the star's Æ. For in this case T is half the excess of the interval from the inferior to the superior transit above the interval from the superior to the inferior. Both these intervals would have to be corrected by very nearly the same quantity, so that in taking one from the other the corrections would disappear. Or, if T be obtained by the rule above, the clock times of the successive transits with the corrections added, being t, $t' + a$, $t'' + 2a$, it is plain that whether the middle term, as belonging to the inferior transit, be subtracted from the two extremes, or the two extremes, for a like reason, from the middle, the quantity a will disappear in the mean of the two remainders.

The time T being known, the meridian error in seconds of space may be obtained by the formula,

$$\textit{Meridian error} = \frac{15\,T}{2} \times \textit{tan. } {*}\textit{'s N.P.D.} \times \textit{sec. of lat. of place.}$$

The numerical value of the multiplier of T employed for Polaris is $\frac{1}{2{,}94}$, and that for δ Ursæ Minoris $\frac{1}{1{,}37}$.

When more than three consecutive transits have been obtained, a value of the meridian error is deduced from the first, second, and third; another from the second, third, and fourth; and so on. If the different values are nearly equal, the mean of all is employed: when they differ considerably, each mean of two consecutive values is used separately.

When neither Polaris nor δ Ursæ Minoris passes at hours convenient for observing consecutive transits, the meridian error is found by single transits compared with the transits of known stars. This method depends on the tabular Æ. of the stars. Let A be the tabular Æ. of the known star, H the clock time of its transit corrected for errors of collimation and level, z the meridian error in seconds of space, and f the factor required for deducing the error in seconds of time by which the transit of that star is affected. Then, loss of clock $= A - H - fz$. By using several known stars a mean value of the clock error is found, corresponding to the mean of the times of their transits. A like value of the clock loss is deduced from the transit of the circumpolar star, by equating which to the preceding, after correcting for clock-rate proportionally to the intervening time, we derive the value of z. Usually a star has been selected which requires little or no correction for clock-rate; and when several stars are used, they are chosen so that the mean of their times of transit shall fall very near the time of transit of the circumpolar star.

From May 21 to June 11, transits of Polaris SP. and Spica were employed, although consecutive transits of Polaris could have been procured. During this time the meridian error underwent little variation, and at the beginning and end of it the determinations by Spica were found to agree sufficiently with those by consecutive transits. On all other occasions the method of consecutive transits is employed, when it was possible to do so without deviating from the rule of not observing between the hours of two and six in the morning.

During the month of July and part of August, consecutive transits not having been obtained, the meridian error is determined by various methods. It was found that Polaris with known stars, and δ Ursæ Minoris with known stars, gave on the same days different determinations, the value assigned by the latter always exceeding that by the other. This difference may be owing to errors in the assumed Æ. of the two stars: perhaps also, to some difference in the mode of estimating the precise time when these slow-moving stars pass the wires of the telescope, their rates of motion being different. The latter source of error is probably avoided, as well as that from error in the assumed Æ., by the method of consecutive transits, as a wrong estimate of the instant of passage will be likely to affect equally different observations. It also appeared by three determinations of meridian error by Polaris, and three by δ Ursæ Minoris, between Aug. 5 and Aug. 12, that the former were all less and the latter all greater than the mean of the whole, which agreed exactly with a determination by consecutive transits of δ Ursæ Minoris on Aug. 9 and 10. For these reasons, when two determinations, separated by no long interval, have been deduced from these stars, it would seem proper to adopt the mean. This has been done in the instance of the meridian error commencing with Procyon, Aug. 12.

I observed also ζ Ursæ Minoris a few times for meridian error, considering that, though less proper for the purpose than the other two stars on account of its swifter motion, it yet admitted of more exactly determining the instants of passing the wires. The values by this star agreed better with those by Polaris than with those by δ Ursæ Minoris. The meridian error adopted July 20, is the mean of one determination by Polaris, one by ζ Ursæ Minoris, and two by δ Ursæ Minoris. That adopted July 26, is the mean of three determinations by ζ Ursæ Minoris and one by δ Ursæ Minoris. These are the only occasions on which ζ Ursæ Minoris has been used.

The method of finding the meridian error by a single transit of a circumpolar star, and accompanying transits of clock-stars, though not to be trusted for absolute determinations, may give very exactly by the difference of two determinations at epochs not very distant, the *change* of meridian error in the interval, especially if the same stars be used for both. The difference applied to a value satisfactorily obtained by other means, at one epoch, may be presumed to be the correct value at the other. This principle has been acted on in two instances. See Calculation of Apparent Right Ascensions, pp. (47) and (51).

Though every attention has been paid to accuracy in the determination of meridian error, there will be found to be sudden changes of its value which are difficult to account for, as it would seem antecedently probable that changes of meridian error, being due to alterations in the position of the Transit axis, would not be more irregular than changes of level error. The best explanation I can give is the following. The change from 8″,7 to 6″,7 on May 24, being accompanied by a considerable change of level error, may be supposed owing to an actual variation of the position of the Transit axis. That from 7″,2 to 10″,6 on June 24, took place on reversing the Transit. This circumstance would not be likely to produce so great a difference, if the error of collimation were well ascertained. According to the practice of former years, I have commenced applying the collimation error from the time of its determination, and in consequence, on June 24, the value is altered from - 0″,1 to - 1″,0. If the last determination had extended *backwards*, the value that would have been employed is + 0″,6 instead of - 0″,1. This would have made the change of meridian error less abrupt. The next considerable change is more difficult of explanation. On

July 17, observations of Polaris SP. and accompanying stars by Mr Baldrey, give 10″,4. By my own observations July 20, ζ Ursæ Minoris gives by the same method 9″,7; δ Ursæ Minoris gives July 21 and 22, 12″,5 and 12″,0, exceeding as on other occasions the value by Polaris. While the subsequent determinations are as follows: by ζ Ursæ Minoris July 27, 5″,3; July 30, 7″,6; Aug. 2, 6″1: by δ Ursæ Minoris Aug. 2, 7″,5; Aug. 6, 7″,7: by consecutive transits of δ Ursæ Minoris Aug. 9 and 10, 6″,9: by Polaris SP. Aug. 9, 6″,3: by Polaris SP. Aug. 11 and 12, 6″,7 and 5″,8: and by δ Ursæ Minoris on the same days, 7″,5 and 7″,4. The succeeding values are consistent with these till Oct. 3, when, on reversing the instrument, another change takes place. The alteration between July 20 and July 27, appeared by a comparison of the clock error as given by Castor before the noon of July 26, with those by Arcturus and ϵ Bootis after the noon of the same day, to have happened between the observations of Castor and Arcturus. By commencing there with the altered value, the clock errors by these two stars accord much better with the clock-rate than they would otherwise. The most probable cause, I can suggest, for the change, is some blow received at the eye-end of the telescope, producing a change of collimation error. I remember on one occasion when I was observing, (I think it was in an unsuccessful attempt to observe Castor, Procyon, and Pollux in succession,) that the eye-end of the telescope struck with some violence against the observing chair, but by oversight no memorandum was made of the circumstance at the time. The error of collimation found by the reversion of Oct. 3, is − 1″,82; on using which the meridian error becomes 11″,62, returning consequently nearly to the value it had before the change in July. If the collimation error determined on Oct. 3 be considered to apply from July 26, and the value + 1″,46, applicable before the reversion, be used instead of − 1″,0, the abrupt changes of meridian error at the beginning and end of the interval will disappear. These considerations, which would seem to justify an alteration of the computations, did not occur to me till the printing of the Volume had proceeded so far that no alteration could be made. They serve, however, to establish the following principle, which in future will be kept in view: viz. that as the error of collimation is permanent in its character, but liable to abrupt changes from casualties, while the meridian error varies gradually, any abrupt change in the calculated value of the latter will probably be owing to change of collimation error, and will indicate the place where, if a change should appear on reversing the instrument to have taken place, it should be first introduced into the calculations.

The *second column* of the right-hand pages contains the seconds of the observed transits, corrected for errors of collimation and level, of all the stars used in determining meridian error.

The meridian error in seconds of space is placed in the *third column*, with bars across to indicate the limits within which each value is used. The methods by which the values are severally obtained, are stated at the bottom of the page.

The correction in seconds of time applied to each transit is

$$\frac{1}{15} \times \textit{meridian error} \times \textit{sin Zen. Dist.} \times \textit{cosec N.P.D.},$$

the zenith distance being negative when north of the zenith, and the north polar distance negative when north of the pole.

The seconds of each transit, corrected for the three errors of collimation, level, and azimuth, are arranged in the *fourth column*. The numbers for the Sun, Jupiter, and Saturn, when both limbs have been observed, apply to their centers, the mean of the uncorrected transits of the two limbs having been corrected in the same manner as other transits.

4. *Clock Error.*

The *fifth column* contains the seconds of the calculated apparent right ascensions of the stars used for determining clock error. Among these Polaris and δ Ursæ Minoris are always included, not as being used for clock error, but because their apparent right ascensions are sometimes employed for finding the meridian error, and may in any case give the means of judging of the position of the instrument. Also, ζ Ursæ Minoris is included as having been used for meridian error. The Assumed Mean Right Ascensions, Jan. 1, 1836, of the fundamental stars and of the three just mentioned, are as follows:

Star's Name.	Assumed Mean A.R. Jan. 1, 1836.	Excess over Naut. Alm. 1836.	Star's Name.	Assumed Mean A.R. Jan. 1, 1836.	Excess over Naut. Alm. 1836.
	h. m. s.	s.		h. m. s.	s.
Polaris...............	1. 1. 5,34	– 0,36	α^2 Libræ	14 . 41 . 49,12	– 0,09
α Arietis............	1 . 57 . 56,70	+ 0,14	α Coronæ Borealis	15 . 27 . 44,96	+ 0,20
α Ceti...............	2 . 53 . 42,98	+ 0,14	α Serpentis.........	15 . 36 . 11,77	+ 0,09
Aldebaran.........	4 . 26 . 31,18	+ 0,11	ζ Ursæ Minoris...	15 . 50. 4,66	+ 0,09
Rigel...............	5. 6 . 39,68	+ 0,10	δ Ophiuchi...	16. 5 . 45,54	+ 0,06
β Tauri............	5 . 15 . 55,96	+ 0,13	Antares............	16 . 19 . 21,96	+ 0,12
α Orionis..........	5 . 46 . 17,85	+ 0,11	α Herculis.........	17. 7 . 10,48	+ 0,11
Castor..............	7 . 24. 7,67	+ 0,03	α Ophiuchi.........	17 . 27 . 19,58	+ 0,11
Procyon............	7 . 30 . 42,88	– 0,07	δ Ursæ Minoris...	18 . 25 . 11,65	– 1,65
Pollux..............	7 . 35 . 16,35	+ 0,01	α Aquilæ...........	19 . 42 . 47,01	+ 0,10
α Hydræ...........	9 . 19 . 31,78	+ 0,01	α^2 Capricorni......	20. 8 . 57,09	+ 0,07
Regulus............	9 . 59 . 37,94	– 0,10	β Aquarii..........	21 . 22 . 55,41	+ 0,15
β Leonis...........	11 . 40 . 41,50	+ 0,06	α Aquarii..........	21 . 57 . 21,69	+ 0,10
Spica...............	13 . 16 . 33,86	+ 0,10	α Pegasi...........	22 . 56 . 35,88	+ 0,04
Arcturus..........	14. 8 . 11,15	+ 0,12	α Andromedæ.....	23 . 59 . 55,67	+ 0,23
ε Bootis............	14 . 37 . 49,66	+ 0,15			

The above right ascensions were obtained by merely adding the annual variations to the mean right ascensions, Jan. 1, 1835, concluded from the *Cambridge Observations* of 1835, and given in pages (93) and (94) of the Volume for that year; with the exception of that of ζ Ursæ Minoris, which was taken from the Nautical Almanac and increased by $0^{\mathrm{s}},09$. This quantity is the mean excess of the concluded mean right ascensions of the fundamental stars above their mean right ascensions in the Nautical Almanac. By the omission of Sirius, which was not observed in 1836, the mean excess becomes $0^{\mathrm{s}},083$. The observations in the present Volume are consequently referred to the same place of the equinox very nearly as those of former years.

To form the numbers of the fifth column, the excesses in the table above are added to the seconds of the apparent right ascensions in the Nautical Almanac of 1836. As the tabular right ascensions are only given for the transits of every tenth day above the pole, the right ascensions corresponding to the observed transits, whether above or below the pole, are deduced by interpolation. Those of Polaris and δ Ursæ Minoris are given for every day, and it is necessary to interpolate for these stars only when they are observed below the pole. It will be seen that the corrections which are thus adopted for aberration, precession, and nutation, are the same as those of the Nautical Almanac, where, in accordance with what is said in the Preface to the Astronomical Society's Catalogue, (pp. x. xiii. and xiv.) the constant of aberration $= 20'',36$, and that of lunar nutation $= 9'',25$. For Polaris and δ Ursæ Minoris the additional corrections are applied, depending on the Moon's longitude, which are given in the Nautical Almanac, p. 408.

The clock errors of the *sixth column* are the excesses of the tabular apparent right ascensions (altered as just stated) above the corrected times of transit.

The correction applied to each transit for clock error consists of two parts, the error at the preceding 0^h of the clock, and the increase of error by the clock's rate in the interval between 0^h and the time of transit. These are calculated in the following manner. The observations are divided into groups, severally containing stars proper for giving clock errors. The groups are separated by intervals, during which there has been a suspension of observations, and which, as often as possible, belong to consecutive nights. The mean of the clock errors in each group is considered to apply to the mean of the times of transit of the stars which furnish them. The comparison of this mean error with errors similarly derived from the next preceding and following groups, gives a preceding and a following rate; whence a rate is inferred which is assumed to hold uniformly throughout the middle group. No definite rule can be given for inferring the adopted rate: attention is paid to the probable degree of accuracy with which the rates it depends on are determined, and also to the proportion of the intervals separating the preceding and following mean clock errors from the intermediate one. The adopted rate, which is put in the *seventh column*, is employed, first, in deducing from the mean clock error of the group to which it applies, the clock errors at all the times the clock shewed 0^h in the interval between the limits of the group, which errors are arranged in the *eighth column;* and then in finding the additional correction for the interval between each transit and the next preceding 0^h. Bars are placed across the seventh and eighth columns to indicate the limits of the groups to which the successive determinations of clock rate are applied.

The clock's rate has varied considerably in the course of the year, but not, in general, with much irregularity. The variations, however, between Oct. 27 and Dec. 2, were more irregular than any preceding or following. I am not able to account for this, unless it be owing to the great and sudden changes of temperature which occurred in that period. The day observations also usually gave a greater losing rate than the night observations. When it appeared that the clock's rate could not be trusted for any long interval, it was thought right in some instances, as on Nov. 8 and Nov. 14, to adopt a rate which satisfied the clock errors of a single night, and at other times, in fixing on the rate, to take into consideration the going of the clock, as indicated by the clock errors of a single group, when they were numerous; by which means something is gained in accuracy with respect to the planetary observations of the group, though the changes of rate become more irregular than they would have been, had the rates been determined in the usual way.

The apparent right ascensions of the *ninth column* are formed by adding the two parts of the correction for clock error to the corrected times of transit contained in the fourth column. It should be observed, that the apparent right ascensions of Polaris and δ Ursæ Minoris cannot be considered as independent determinations, excepting where the meridian error is known by consecutive transits of one of these stars: nor can those of the fundamental stars be considered in any degree as such, unless three at least are contained in the same group.

The pages immediately following those whose contents have now been explained, contain tables of results deduced from the Observed Transits and Calculated Apparent Right Ascensions.

The *Sidereal Times occupied by the Passages of the Diameters of the Sun, Moon, Jupiter, and Saturn's Ring over the Meridian*, pages (86) and (87), are the differences of the concluded Transits of the first and second limbs over the mean of the seven wires. For the Moon a small correction is necessary, on account of the defect of illumination of one of its limbs, as it can very rarely happen that both limbs are quite full. The rule for investigating this correction (as given in the Introduction of the *Cambridge*

Observations of 1835, p. xv.) is, to ascertain the Moon's distance in Æ. from the point of opposition to the Sun, and multiply this distance by the cosine of the Sun's declination, in order to obtain the length of the arc of a great circle drawn perpendicularly from the Sun's place on the meridian passing through the Moon's place. The required correction, to be added to the difference of the concluded Transits, is then the versed sine of this arc on the Moon's surface. In the three instances of 1836, the corrections were investigated by a process, longer than the preceding, which it will not be necessary to describe, as the same results were afterwards found by the above rule. The several amounts were $0^{s},01$, $0^{s},06$, and $0^{s},02$.

The *Apparent Right Ascensions of Polaris and δ Ursæ Minoris*, pages (90) and (91), are merely extracted from the columns of Calculated Apparent Right Ascensions: and the *Mean Right Ascensions* (*Jan.* 1, 1836) *of these Stars* (in the same pages) are formed by subtracting the corrections for aberration, precession and nutation, from the Apparent Right Ascensions. The *Mean Right Ascensions* (*Jan.* 1, 1836) *of Stars observed in the year* 1836, pages (90)–(98), are formed in the same manner.

For Stars in the list of the Nautical Almanac, the requisite corrections are found by subtracting the mean from the apparent right ascensions of that work; the apparent right ascensions of Polaris and δ Ursæ Minoris being affected with the corrections depending on the Moon's longitude. For stars in the Royal Astronomical Society's Catalogue, not included in the list of the Nautical Almanac, the corrections are calculated by the formula $Aa + Bb + Cc + Dd$; log A, log B, log C, and log D being taken from the Nautical Almanac without alteration, and log a, log b, log c, log d from the Astronomical Society's Catalogue. For stars not included in that Catalogue, the corrections are calculated by the following formula, depending on the expressions for a, b, c, d, given in p. xvii. of the Preface:

$$\text{Correction} = \frac{A}{15} \cos \text{Æ}. \operatorname{cosec} N.P.D. + \frac{B}{15} \sin \text{Æ}. \operatorname{cosec} N.P.D. + C \times (n^{\circ} \log = 0,4869)$$

$$+ \frac{C}{15} \times (n^{\circ} \log = 1,3020) \times \sin \text{Æ}. \operatorname{cotan} N.P.D. + \frac{D}{15} \cos \text{Æ}. \operatorname{cotan} N.P.D.$$

The *Catalogue* in page (99) contains the mean Æ. of each star concluded from *all* the preceding values of its mean Æ. The mean excess of the concluded mean Æ. of the fundamental stars above the mean Æ. of the same stars in the Nautical Almanac (1836), is $0^s,086$; the mean excess of the assumed Æ., as before stated, is $0^s,083$. The *Annual Variations* are taken from the Astronomical Society's Catalogue, or are computed by the formula which is used there.

Observations with the Mural Circle.

The particulars of observations with the Mural Circle, and the elements of the calculations of Geocentric North Polar Distances, are recorded in pages 1 to 97. The left-hand pages contain the pointer and microscope readings, with those corrections only that are required for finding the concluded circle readings. The following is the explanation of the contents of the separate columns.

The *first column* has the day of observation, commencing always with the Sun's passage.

The *second column* contains the name of the object observed, with letters indicating the method of observation. ***R*** denotes that it is observed by reflexion: ***M*** that it is observed with the micrometer wire. When the limb of a planet is mentioned, it is that observed with the fixed wire. The names of stars contained in the Nautical Almanac are adopted from that work. The rest are designated by the numbers of the Astronomical Society's Catalogue, with the exception of a few not found there, whose places are marked by their approximate Æ., which may be inaccurate 2^s or 3^s.

The *third column* gives the indication of the pointer. The divisions of the circle are 5′ apart, and the pointer is so placed, that the interval on the limb of the circle between it and the zero of microscope A is very nearly 10°. 45′. The graduation proceeds in the direction from the microscope to the pointer, and the pointer reading in column 3 is the degrees and minutes of that division which, in the order of graduation, comes next *before* the position of the pointer. This, as first set down, is often erroneous by some multiple of 5′; but as the error is readily detected in the computations, no notice is taken of it in the notes.

The *six succeeding columns* contain the readings of the six microscopes. The minutes (which are set down only in the first of these columns) are indicated by the number of indents of the comb of the microscope in the interval between the division bisected by the micrometer wires and the zero of the comb; and the seconds and fraction of a second are taken from the micrometer head. The bisected division is that next to the zero, on the side, as seen in the microscope, of the micrometer-head, excepting in some instances to be mentioned hereafter. The microscope reading is thus the arc of the circle between the bisected division and the zero of the microscope: and as the direction from the bisected division to the zero is that in which the graduation, as seen in the microscope, increases, the microscope reading is also the arc between the division which gives the pointer reading of column 3, and a certain fixed point distant exactly 10°. 45′ from the zero of microscope *A*. Consequently the microscope reading *added* to the pointer reading is an arc of the circle, commencing with the zero of its graduation and terminating at this point. If the circle were perfectly graduated, and always retained the same circular form, and if the bisections of the divisions were accurately performed, arcs for different positions of the circle, referred in this way to the same point, would be comparable with each other, though determined by only one microscope, provided also the microscope retained a fixed position relatively to the axis of the circle. Errors from imperfect graduation, inaccurate bisections, and deviations from the circular form, may be presumed to be corrected in a great measure by the use of six microscopes, disposed at the opposite ends of diameters, and at equal distances round the circle. It appears, however, that a residual inequality remains, of which more will be said hereafter.

It is to be observed, that the order of the microscopes, beginning with *A*, which is at the northern extremity of the horizontal diameter of the circle, and proceeding over the highest part of the limb, is *ACEBDF*. Consequently *A* and *B*, *C* and *D*, *E* and *F*, are severally at the opposite ends of the same diameter. When from accidental causes (such as happened

April 26, May 3, June 11, and Nov. 9) one microscope is unfit for use, the opposite one is always omitted.

In three instances only has there been occasion to alter the minutes of the microscope readings as set down in the observing book. As it is scarcely possible that such alterations can be doubtful, I have not thought it worth while to mention them in the notes. No alteration has in any instance been made of the seconds set down.

The *tenth column* contains the readings of the micrometer for the objects in column 2 which have the letter *M* subjoined. Also the times by Molyneux of the bisection of Polaris and δ Ursæ Minoris, either by the fixed or the micrometer wire, whenever these stars are not observed very near the true meridian, are placed in the same column.

The amount of correction for reducing an observation with the micrometer wire to the fixed wire, and that for reducing an observation at a distance from the middle wire to the middle wire, are placed in the *eleventh column*. The former is always placed first. The other depends, in the case of the fixed stars, only on the curvature of their paths in the field of view of the telescope; but for the moving bodies, it depends both on this circumstance and on the change of their N.P.D. The two parts, of which the correction in the latter case consists, as well as in every instance the interval between the place of bisection and the middle wire, are stated in the notes at the bottom of the page. These corrections are calculated by the following methods.

The micrometer correction is the difference between the micrometer reading, and the reading at coincidence of the micrometer wire with the fixed wire given at the bottom of the right-hand page. This difference is converted into arc by multiplying by 20″,843, which is the arc corresponding to one revolution of the micrometer-head. Now, as the micrometer readings increase in the direction from the fixed wire to the micrometer-head, which is also the direction in which the graduation of the circle proceeds, if the micrometer reading exceed the reading at the coincidence of the wires, the telescope must be turned in the direction of the graduation to bring the object to the fixed wire. The circle reading referred to a fixed extraneous point will thus be diminished, and consequently in the case supposed the correction is *negative*. By analogous reasoning, the correction is positive when the micrometer reading is less than the reading at coincidence.

The coincidence reading having appeared subject to variation, the practice was commenced in the last quarter of the year of observing it once a week, and beginning to use the determination the fourth day previous. Also, since Nov. 16, the coincidences have been taken at the five vertical wires, as the moveable wire is not exactly parallel to the fixed wire, and the different values have been used for the objects (particularly the Moon) which have been observed at a distance from the middle wire. The times of taking the coincidences and commencing with the new values, are stated in the space below the columns of the right-hand pages. For determining the value of the micrometer revolution I made observations, which were recorded as follows.

March 28. 0^h. The sky cloudy. Grantchester church appeared faint at first, but was afterwards much more distinct. It was perfectly steady. The micrometer wire, alternately at 0^r and 20^r, was brought to the spire at its upper extremity, which appears as a short well-defined horizontal line at the foot of the rod supporting the vane.

Micrometer.	Pointer.	*A*	*B*	*C*	*D*	*E*	*F*	Means.
r	° ′	′ ″	″	″	″	″	″	° ′ ″
0	284 . 55	4 . 13,9	17,0	14,4	11,3	11,4	11,3	284 . 59 . 13,33
20	285 . 5	1 . 10,1	13,7	13,0	8,5	9,0	8,9	285 . 6 . 10,57
0	284 . 55	4 . 15,0	17,5	16,1	13,2	12,6	11,9	284 . 59 . 14,50
20	285 . 5	1 . 11,7	15,0	13,0	10,1	10,5	10,3	285 . 6 . 11,80
0	284 . 55	4 . 14,5	17,9	15,7	12,4	12,7	11,9	284 . 59 . 14,30
20	285 . 5	1 . 10,5	13,2	12,2	8,5	9,4	8,1	285 . 6 . 10,35

The above means are corrected for the error of runs (which at this time was + 0″,9) according to a principle which will be shortly explained. The mean difference of the circle readings for 0^r and 20^r of the micrometer is 6′ . 56″,86; whence the value of one revolution is found to be 20″,843.

The correction to the meridian for curvature of path is obtained for Polaris and δ Ursæ Minoris by converting the time by Molyneux in column 10 into time by Hardy, by means of comparisons given at the bottom of the right-hand pages, and thence inferring the true sidereal time from the error of Hardy given by the transit observations. The correction is then immediately deduced from the difference of this time and the time of meridian passage given in the Nautical Almanac, by means of tables especially calculated for these two stars. For other stars, the calculation is performed by a formula, easily investigated, according to which, the correction for a given distance from the middle wire varies as the tangent of declination, and for a given declination varies as the square of the distance. When the declination is 45°, the correction for the interval from the middle wire traversed by an equatoreal star in $16^s,6$, which is the mean interval of the wires, is $0'',1503$. For small declinations this correction is omitted as being too inconsiderable. With respect to the sign of the correction it is to be observed, that in looking directly at an object between the pole and the equator, the telescope is turned by reason of the curvature of path too far in the direction in which the graduation proceeds. The circle reading is consequently too small, and the correction is positive. The contrary is the case below the equator and below the pole. In reflexion observations, the error of position of the telescope is in the opposite direction, and the sign of the correction is always contrary to what it is in observing directly the same objects.

The correction for change of N.P.D. is calculated in the case of the Sun and Planets, by inferring the change in the time between the instant of bisection and the passage across the middle wire, from the horary variation given in the *Meridian Ephemeris*. This time is estimated by the intervals between the wires, taking each interval equal to $16^s,6 \times$ sec. of declination. In observations of the Moon, an exact value of the time of passing from one wire to the next is required, on account of the rapid change of her N.P.D. The value employed is $16^s,6$, multiplied by a factor taken from Caturegli's Ephemeris, which expresses the sidereal time occupied by the Moon in passing $15''$ from the meridian, including the effects of parallax and change of Æ. The correction required is then inferred from the variation of the Moon's N.P.D. in 10^m, given in the Nautical

Almanac. The sign of the correction for change of N.P.D. is determined by considering, that if the N.P.D. of the moving body be increasing, before it passes the middle wire the telescope is advanced too far in the direction of the circle's graduation, and after passing, too far in the contrary direction. The circle reading requires a *plus* correction in the first case, and a *minus* correction in the other. If the N.P.D. is decreasing, the signs of the corrections are changed.

When both limbs of the Moon are observed, a correction is generally required on account of the defect of illumination of one of them. The correction to the reading for a deficient S.L. is positive; to that for a deficient N.L., negative. The amount of correction is readily obtained in the manner stated in the Introduction (p. xxvi.) of the Observations of 1835, by using a common celestial globe. In the few instances of 1836, calculation alone was employed, both for finding which was the defective limb and the amount of correction. The process, which was long, need not be here detailed.

Another correction, required by the construction of the micrometer microscopes, is applied to every observation, though not explicitly stated in any of the columns. When two adjacent divisions are viewed with a microscope, five turns of the micrometer ought to carry the micrometer wire exactly from the image of one division to that of the other. But this adjustment is an extremely difficult one to effect with accuracy, and if effected, would not be permanent, because the intervals between the divisions are continually changing by the expansion and contraction of the circle. Probably also through the influence of temperature on the screw of the microscope, the space passed over by the cross wires in one revolution of the micrometer is not constantly the same. Recourse is therefore had to a method of correction applied from time to time, and especially after considerable changes of temperature. The circle is clamped in such a position, that a division is near the zero of the microscope on the *negative* side, or that removed from the micrometer head. This division is first bisected by the cross wires, and the seconds of the reading set down. The adjacent division on the *positive* side of zero, or towards the micrometer-head, is then bisected, and the seconds read off. The excess of the second reading above the first, with sign changed, is the quantity to be added to a micrometer reading of the microscope which gives the excess, in order to correct for the inequality in question, supposing the reading to be exactly 5′, and to have been obtained in the manner before described as employed in the observations. For a less reading the correction is proportionally less. In this way the reading of each microscope might be corrected; but it amounts to the same and is more expeditious, to add the several excesses together, to take a part of the sum with sign changed, bearing the same ratio to the whole as the approximate mean microscope reading to 5′, and then adding up this part with the six microscope readings, to divide the sum by 6 to obtain the correct mean reading. The sum of the excesses with sign changed, is the "Correction for Runs" at the bottom of the right-hand pages, where also the times of taking the runs and commencing a new value are stated.

It sometimes happens in an observation, that a division falls so near the zero that it is uncertain whether it be on the negative or positive side. In such a case it is always bisected, and should it afterwards be found to be on the negative side, the pointer reading and minutes of the microscope readings are put down for the sake of uniformity as if the division on the positive side had been bisected, but no correction, or only a small one, is applied for runs. When this circumstance occurs it is mentioned in the notes.

The following are the Observations for Runs, 1836.

Day.	Division, &c.	*A*	*B*	*C*	*D*	*E*	*F*	Sum of Excesses.
Mar. 25	Negative side.......	5,3	4,3	4,2	2,0	3,0	4,0	
	Positive..............	6,2	5,0	4,3	2,0	1,9	2,6	
	Excess of latter....	+ 0,9	+ 0,7	+ 0,1	0,0	− 1,1	− 1,4	− 0,8
28	Negative side.......	43,6	47,4	44,8	42,8	44,1	43,2	
	Positive............ .	44,0	48,6	45,0	42,4	43,1	41,9	
	Excess of latter.....	+ 0,4	+ 1,2	+ 0,2	− 0,4	− 1,0	− 1,3	− 0,9
April 6	Negative side.......	4,5	4,9	3,2	2,3	6,6	4,3	
	Positive	4,9	6,0	4,1	2,2	5,1	3,2	
	Excess of latter.....	+ 0,4	+ 1,1	+ 0,9	− 0,1	− 1,5	− 1,1	− 0,3

Day.	Division, &c.	*A*	*B*	*C*	*D*	*E*	*F*	Sum of Excesses.
April 19	Negative side.......	57,6	57,9	54,0	54,2	57,4	54,8	
	Positive	57,6	58,9	55,0	54,2	56,0	54,0	
	Excess of latter.....	0,0	+ 1,0	+ 1,0	0,0	− 1,4	− 0,8	− 0,2
27	Negative side.......	5,1	6,0	3,0	2,1			
	Positive.............	5,3	6,9	3,0	1,8			
	Excess of latter.....	+ 0,2	+ 0,9	0,0	− 0,3			+ 0,8
29	Negative side.......	49,9	51,1	48,2	47,0	48,2	48,7	
	Positive.............	50,4	52,1	48,9	46,6	48,6	47,5	
	Excess of latter.....	+ 0,5	+ 1,0	+ 0,7	− 0,4	+ 0,4	− 1,2	+ 1,0
May 6	Negative side.......	38,3	38,7	34,6	39,2	37,7	37,9	
	Positive	38,9	39,2	35,0	39,3	37,6	36,9	
	Excess of latter	+ 0,6	+ 0,5	+ 0,4	+ 0,1	− 0,1	− 1,0	+ 0,5
16	Negative side.......	7,1	58,9	0,8	59,8	0,7	0,7	
	Positive	7,4	59,7	1,2	60,9	0,6	0,1	
	Excess of latter.....	+ 0,3	+ 0,8	+ 0,4	+ 1,1	− 0,1	− 0,6	+ 1,9
26	Negative side.......	54,0	55,6	51,8	57,6	55,8	53,9	
	Positive.............	54,1	56,0	51,8	57,1	55,3	52,7	
	Excess of latter	+ 0,1	+ 0,4	0,0	− 0,5	− 0,5	− 1,2	− 1,7
June 11	Negative side.......	18,0	12,9	13,1	17,2			
	Positive.............	19,0	14,2	14,0	16,5			
	Excess of latter.....	+ 1,0	+ 1,3	+ 0,9	− 0,7			+ 2,5
13	Negative side.......	53,3	48,0	46,3	52,4	50,4	50,4	
	Positive.............	54,0	49,1	47,6	53,1	52,7	50,0	
	Excess of latter.....	+ 0,7	+ 1,1	+ 1,3	+ 0,7	+ 2,3	− 0,4	+ 5,7
14	Negative side.......	46,0	40,4	36,9	45,3	40,4	43,9	
	Positive.............	46,9	42,6	39,2	45,9	40,7	43,3	
	Excess of latter.....	+ 0,9	+ 2,2	+ 2,3	+ 0,6	+ 0,3	− 0,6	+ 5,7
24	Negative side	6,4	3,4	0,0	5,5	58,8	2,6	
	Positive	6,9	4,3	1,1	5,8	60,7	1,6	
	Excess of latter.....	+ 0,5	+ 0,9	+ 1,1	+ 0,3	+ 1,9	− 1,0	+ 3,7
July 1	Negative side.......	19,5	17,8	10,3	21,4	14,8	18,3	
	Positive	20,4	19,6	11,6	22,0	16,3	18,0	
	Excess of latter.....	+ 0,9	+ 1,8	+ 1,3	+ 0,6	+ 1,5	− 0,3	+ 5,8
5	Negative side.......	50,3	48,8	40,9	52,3	46,0	48,6	
	Positive.............	52,6	50,0	42,6	53,4	48,0	48,2	
	Excess of latter.....	+ 2,3	+ 1,2	+ 1,7	+ 1,1	+ 2,0	− 0,4	+ 7,9
5	Negative side.......	33,3	24,2	28,8	32,9	25,7	31,1	
	Positive.............	34,9	24,6	30,1	34,1	27,2	31,2	
	Excess of latter.....	+ 1,6	+ 0,4	+ 1,3	+ 1,2	+ 1,5	+ 0,1	+ 6,1

Day.	Division, &c.	*A*	*B*	*C*	*D*	E	*F*	Sum of Excesses.
July 7	Negative side.......	58,4	56,1	50,7	58,6	50,8	54,1	
	Positive	59,4	56,8	51,3	58,5	52,5	53,5	
	Excess of latter....	+ 1,0	+ 0,7	+ 0,6	- 0,1	+ 1,7	- 0,6	+ 3,3
13	Negative side.......	28,0	22,3	20,0	28,9	20,3	25,2	
	Positive	29,5	23,9	21,5	30,1	22,6	24,7	
	Excess of latter	+ 1,5	+ 1,6	+ 1,5	+ 1,2	+ 2,3	- 0,5	+ 7,6
13	Negative side..	41,8	36,7	32,8	40,1	33,3	37,6	
	Positive	42,9	37,5	33,8	40,5	35,4	36,8	
	Excess of latter.....	+ 1,1	+ 0,8	+ 1,0	+ 0,4	+ 2,1	- 0,8	+ 4,6 } + 6,4
13	Negative side.......	15,2	10,2	7,8	16,2	7,4	11,8	
	Positive	17,0	11,8	9,8	16,8	9,1	11,0	
	Excess of latter.....	+ 1,8	+ 1,6	+ 2,0	+ 0,6	+ 1,7	- 0,8	+ 6,9
19	Negative side.......	15,2	9,1	6,3	14,1	6,4	11,4	
	Positive	16,0	9,7	7,8	14,8	8,1	10,8	
	Excess of latter.....	+ 0,8	+ 0,6	+ 1,5	+ 0,7	+ 1,7	- 0,6	+ 4,7
27	Negative side.......	20,1	41,8	24,0	46,1	32,4	36,6	
	Positive	21,1	43,1	25,2	46,2	34,7	36,2	
	Excess of latter.....	+ 1,0	+ 1,3	+ 1,2	+ 0,1	+ 2,3	- 0,4	+ 5,5
31	Negative side.......	22,3	43,8	28,0	50,1	34,0	41,6	
	Positive	23,0	44,5	29,0	49,3	35,3	40,4	
	Excess of latter....	+ 0,7	+ 0,7	+ 1,0	- 0,8	+ 1,3	- 1,2	+ 1,7
31	Negative side.......	16,8	38,6	23,3	44,6	28,7	35,0	} + 2,1
	Positive	17,6	38,9	23,9	44,5	30,2	34,3	
	Excess of latter. ...	+ 0,8	+ 0,3	+ 0,6	- 0,1	+ 1,5	- 0,7	+ 2,4
Aug. 2	Negative side.......	20,2	40,9	25,9	47,2	32,5	37,9	
	Positive..............	21,3	42,0	25,9	46,4	34,0	37,0	
	Excess of latter....	+ 1,1	+ 1,1	0,0	- 0,8	+ 1,5	- 0,9	+ 2,0
7	Negative side......	29,7	50,2	35,3	54,3	42,0	46,5	
	Positive	30,8	50,8	35,7	55,1	42,9	45,4	
	Excess of latter....	+ 1,1	+ 0,6	+ 0,4	+ 0,8	+ 0,9	- 1,1	+ 2,7
15	Negative side.......	18,7	37,9	23,8	44,5	29,8	36,8	
	Positive	19,7	39,4	25,0	44,1	30,8	36,0	
	Excess of latter....	+ 1,0	+ 1,5	+ 1,2	- 0,4	+ 1,0	- 0,8	+ 3,5
24	Negative side.	59,7	63,9	59,6	60,7	61,0	60,3	
	Positive	60,6	65,0	59,7	59,8	62,3	59,5	
	Excess of latter.....	+ 0,9	+ 1,1	+ 0,1	- 0,9	+ 1,3	- 0,8	+ 1,7
28	Negative side.......	58,6	63,5	58,0	59,4	58,8	59,0	
	Positive..............	60,2	64,0	57,5	60,9	60,3	57,6	
	Excess of latter.....	+ 1,6	+ 0,5	- 0,5	+ 1,5	+ 1,5	- 1,4	+ 3,2

Day.	Division, &c.	*A*	*B*	*C*	*D*	*E*	*F*	Sum of Excesses.
Sept. 4	Negative side.......	7,8	10,1	7,0	6,8	8,8	7,6	
	Positive	9,8	11,0	6,5	6,1	9,3	7,0	
	Excess of latter.....	+ 2,0	+ 0,9	- 0,5	- 0,7	+ 0,5	- 0,6	+ 1,6
11	Negative side.......	16,5	20,0	16,5	16,6	19,8	17,8	
	Positive	17,1	21,1	17,0	16,4	19,8	17,1	
	Excess of latter.....	+ 0,6	+ 1,1	+ 0,5	- 0,2	0,0	- 0,7	+ 1,3
20	Negative side.......	30,0	26,8	27,8	31,3	30,4	33,0	
	Positive	30,8	26,8	28,2	30,4	31,0	31,3	
	Excess of latter.....	+ 0,8	0,0	+ 0,4	- 0,9	+ 0,6	- 1,7	- 0,8
24	Negative side.......	23,2	24,7	19,3	27,4	24,8	28,1	
	Positive	24,3	25,3	21,0	27,5	26,7	27,8	
	Excess of latter.....	+ 1,1	+ 0,6	+ 1,7	+ 0,1	+ 1,9	- 0,3	+ 5,1
26	Negative side.......	14,4	13,7	11,8	18,0	11,9	18,5	
	Positive...............	16,2	14,8	12,7	18,0	13,0	17,8	
	Excess of latter.....	+ 1,8	+ 1,1	+ 0,9	0,0	+ 1,1	- 0,7	+ 4,2
30	Negative side.......	44,4	45,2	43,3	47,3	40,7	46,0	
	Positive	45,8	45,8	44,8	47,3	41,1	46,0	
	Excess of latter.....	+ 1,4	+ 0,6	+ 1,5	0,0	+ 0,4	0,0	+ 3,9
Oct. 13	Negative side.......	32,2	32,9	32,3	36,7	29,0	36,2	
	Positive	32,5	34,0	32,1	36,4	31,4	35,7	
	Excess of latter....	+ 0,3	+ 1,1	- 0,2	- 0,3	+ 2,4	- 0,5	+ 2,8
23	Negative side.......	42,3	46,3	42,9	47,0	42,5	49,0	
	Positive	42,4	47,3	44,0	47,3	44,9	48,0	
	Excess of latter.....	+ 0,1	+ 1,0	+ 1,1	+ 0,3	+ 2,4	- 1,0	+ 3,9
30	Negative side.......	9,5	9,3	12,0	13,5	8,0	12,0	
	Positive..............	10,7	10,0	11,0	12,4	9,0	10,1	
	Excess of latter.....	+ 1,2	+ 0,7	- 1,0	- 1,1	+ 1,0	- 1,9	- 1,1
Nov. 6	Negative side.......	41,2	40,1	41,9	42,9	39,1	41,7	
	Positive	41,7	40,1	41,2	41,2	39,8	40,6	
	Excess of latter.....	+ 0,5	0,0	- 0,7	- 1,7	+ 0,7	- 1,1	- 2,3
10	Negative side.......			57,8	61,0	58,0	59,3	
	Positive			58,9	60,4	58,2	58,3	
	Excess of latter.....			+ 1,1	- 0,6	+ 0,2	- 1,0	- 0,3
13	Negative side.......	11,1	9,9	10,0	11,2	7,2	11,8	
	Positive	11,0	9,2	9,4	10,9	7,4	10,5	
	Excess of latter.....	- 0,1	- 0,7	- 0,6	- 0,3	+ 0,2	- 1,3	- 2,8
20	Negative side.......	35,8	36,4	34,7	35,7	33,1	35,8	
	Positive	34,7	37,3	34,9	34,1	33,0	33,4	
	Excess of latter.....	- 1,1	+ 0,9	+ 0,2	- 1,6	- 0,1	- 2,4	- 4,1

Day.	Division, &c.	*A*	*B*	*C*	*D*	*E*	*F*	Sum of Excesses.
Nov. 30	Negative side.......	34,8	28,5	31,1	30,1	25,4	30,8	
	Positive..............	35,1	31,9	31,0	29,1	26,0	29,2	
	Excess of latter.....	+ 0,3	+ 3,4	- 0,1	- 1,0	+ 0,6	- 1,6	+ 1,6
Dec. 11	Negative side.......	17,0	12,4	13,2	14,3	10,3	15,3	
	Positive	17,0	16,4	13,8	13,4	12,0	14,1	
	Excess of latter.....	0,0	+ 4,0	+ 0,6	- 0,9	+ 1,7	- 1,2	+ 4,2
19	Negative side......	46,0	51,4	50,3	51,8	49,4	52,2	
	Positive	47,1	55,1	50,9	52,0	49,5	51,2	
	Excess of latter.....	+ 1,1	+ 3,7	+ 0,6	+ 0,2	+ 0,1	- 1,0	+ 4,7
19	Negative side.......	54,5	56,8	60,8	60,4	56,2	58,2	+ 3,7
	Positive	55,8	60,4	60,4	59,8	56,4	56,8	
	Excess of latter	+ 1,3	+ 3,6	- 0,4	- 0,6	+ 0,2	- 1,4	+ 2,7
23	Negative side.......	1,9	1,0	8,0	5,0	3,8	6,1	
	Positive..............	2,2	5,0	8,0	4,0	3,8	4,5	
	Excess of latter.....	+ 0,3	+ 4,0	0,0	- 1,0	0,0	- 1,6	+ 1,7

The sums of the excesses increase in value with considerable regularity with the mean increase of the temperature of the year; and the more abrupt changes (as on May 26, June 11, Sept. 24, and Sept. 30,) were accompanied by proportional variations of temperature. The large value on July 5 resulted from taking the runs soon after the Sun had, by accident, been shining on the circle: the smaller value of the same day was obtained in the evening. The different values on July 13 were given in succession by different positions of the telescope. So on July 31 and Dec. 19. When the runs of four microscopes only were taken, the other two from accidental causes were not in use. Between November 20 and 30 the screw of microscope *B* was taken out and cleaned, having become rusty by the penetration of water through the micrometer-head, an accident to which this microscope is more liable than the others, by having its micrometer-head directed upwards. It was necessary to use force in extricating the screw, and the consequence appears to have been, that the run of the microscope was permanently increased. As, however, it maintains a consistent value, no sensible error is induced by this circumstance, the peculiar advantage of the correction for runs being to counteract the effect of casualties of this nature.

After the position of the telescope on the circle was changed on Sept. 19, the wire-frame through inadvertence was not adjusted to make an equatoreal star pass exactly along the fixed wire, and was suffered to retain its position till Dec. 12. A correction, therefore, for "the position of the wire-frame," is applied to all observations taken in that interval at a distance from the middle wire. The amount of correction was ascertained by bisecting 20 different stars with the micrometer wire at their passages across the first and fifth wires, and taking the mean difference of the micrometer readings at the two wires. It was found that the mean excess of the micrometer reading at the fifth wire (the star being above the pole) above that at the first wire was $0^r,157$, which converted into space by multiplying by $20'',843$, is $3'',272$. Hence the required correction, which varies only as the distance from the middle wire, is calculated at the rate of $0'',818$ for a distance equal to the mean interval between the wires. The sign of the correction is the same whether the object be observed directly or by reflexion, on the micrometer or the fixed wire, and is determined by considering that the circle readings are greater as the micrometer readings are less, and that by the error of position of the wires the micrometer gives too small a reading before an object above the pole passes the middle wire, so that the correction to the circle reading is in that case *negative*, becoming positive after the passage. For stars below the pole, which traverse the wires in the contrary order, the correction is *plus* before passing the middle wire, and *minus* after.

The concluded circle reading in the *twelfth column* is the mean of the microscope readings with all the above corrections applied. It is, therefore, the reading of the circle, supposing the microscopes to be in accurate adjustment for runs, and the body to have been observed with the fixed wire as it passed the middle vertical wire. For Polaris and δ Ursæ Minoris the concluded reading applies to the time of meridian passage.

The *thirteenth column* contains the initial of the observer's name. The observations marked *C* are by myself, and those marked *G* by Mr Glaisher.

Calculation of Geocentric North Polar Distances.

The columns of the right-hand pages exhibit the elements of the calculations by which, in the first place, the apparent zenith distances of the objects bisected are deduced from the concluded circle readings, and then the Geocentric North Polar Distances, as well of the centers of the moving bodies as of the fixed stars, are obtained.

The *first column* gives the seconds of the circle reading for the zenith point, as determined by each star observed at the same passage by reflexion and directly. The mean between the two readings of a double observation is the reading corresponding to one or the other horizontal position of the telescope, and increased or diminished, as the position may require, by 90°, gives the reading when the telescope is vertical and object-glass upwards. The readings thus determined, which for shortness are called "zenith points," are found to be different for different stars. This *discordance* will be noticed farther on. The zenith point adopted for a number of observations in common to form the zenith distances, is placed at the bottom of the page, with the date of its commencement. It is generally deduced from the several zenith points of the series to which it applies, by the same rule as in preceding years, viz. "by dividing the stars observed by reflexion and directly into three groups, one comprehending stars near the zenith, and the others comprehending the stars far from the zenith, north and south respectively: the mean of the zenith points given by each group is considered as one result, and the mean of the three results is adopted for the zenith point." As far as is practicable, the groups are made each to contain nearly the same number of zenith points.

The limits between which the same zenith point is used, include all observations in the course of which no perceptible cause of alteration occurred, distinct from the cause, whatever it may be, of the above-mentioned discordance; and have generally been determined by abrupt alterations, arising either from instrumental adjustments or from accident. Every known cause of a change is stated at the bottom of the page. A fault of the instrument, which had probably long been the occasion of sudden changes of the zenith point, was detected Oct. 18, in the manner described in the notes, and rectified Oct. 28.

The apparent zenith distance placed in the *second column*, may be obtained when the observation is direct, by subtracting the adopted zenith point from the circle reading of column 12, left-hand page; and, if the remainder be greater than 180°, adding to it when negative and subtracting from it when positive, 360°. The apparent zenith distance from reflexion observations is the supplement of the angle given by this rule. The object is South or North of the zenith, according as the result is in either case positive or negative.

The four next columns contain the materials for the calculation of *refraction*. The *third column* has the height of the barometer, as shewn by a cistern-barometer constructed by Dollond, and attached to the circle pier. The lower surface of the mercury is raised by a screw pressing the bag till the light seen below a brass edge is excluded; and a brass slider is brought to the upper surface to shut out the light in the same way. The *fourth column* has the reading of the thermometer whose bulb is plunged in the cistern of the barometer.

As it appeared by a comparison of this with six other barometers, (the particulars of which are given in the Volume for 1835, p. xxxi.) that its readings were too small by 0,1 inch nearly, the height immediately read from the barometer, which is that recorded in column 3, has always been increased by that quantity in calculating the refraction.

The *fifth column* has the mean of the readings of the two free thermometers. These thermometers are carried by jointed arms attached to the top of the pier, one at the North the other at the South end, and are nearly on a level with the upper limb of the circle. Precautions have been taken to ensure the free passage of air by the thermometer bulbs, and to protect them from radiation. When the Sun is near the meridian, the thermometers are turned from its rays by means of the jointed arms. All but the lowest shutters of the circle-room are kept open before and during observations, except when it is occasionally necessary for obtaining reflexion observations to close them partially a few minutes, on account of the disturbance of the mercury by the wind. Thus there is generally a strong current of air past the thermometers; and as the observing lamps are removed from the room when not in use, it may be presumed that the interior temperature is very little different from the exterior. Mr Airy found, in fact, by direct experiment in 1835, that the indications of these thermometers did not materially differ from those of an out-door thermometer, similarly constructed and mounted. (See Introduction to Volume for 1835, p. xxxiii.)

The refraction in the *sixth column* is calculated by Bessel's tables (*Tabulæ Regiomontanæ*, p. 538, &c.) as altered by Mr Airy to dispense with the necessity of change of sign, and expanded to avoid interpolation.

The *seventh column* contains the parallax. If r and D be respectively the lines from the center of the Earth to the place of observation and object observed, z the angle they make with each other, and p the parallax; then $\sin p = \frac{r}{D} \sin z$. Also, r' being the Earth's equatoreal radius, and D' the mean distance of the Sun from the Earth, we have identically

$$\frac{r}{D} = \frac{r}{r'} \times \frac{r'}{D'} \times \frac{D'}{D}.$$

Now, in computing the parallax for the Sun and planets, $\log \frac{r}{r'}$ is taken $= 9{,}9990916$, which supposes the ratio of the Earth's axes to be that of 297 to 298; $\log \frac{r'}{D'} = 0{,}9333607$, the assumed value of the Sun's equatoreal horizontal parallax at the mean distance being $8'',5776$; $\log \frac{D'}{D}$ is the arithmetical complement of the log of distance given in the Nautical Almanac; $\sin p$ is considered equal to p; and z is found by subtracting $11'.12''$, the angle of the vertical given by the above ratio of the axes, from the observed zenith distance. The formula used for computing the parallax of the Moon's limbs is

$$\sin p = \frac{r}{r'} \sin (P + \alpha) \sin z,$$

where P is the equatoreal horizontal parallax, which is interpolated with second differences from the Nautical Almanac, and α is a small correction introduced by finding exactly the parallax of the limb, that is, the angle made by a tangent to the highest or lowest point of the Moon's surface, as seen from the place of observation, with a tangent to the highest or lowest point, as seen from the Earth's center. In using the above formula, the sine is not considered equal to the arc. The other elements of the calculation are the same as for the planets.

For the calculation of a, which is dependent on the zenith distance, I must refer to the *Cambridge Observations*, Vol. IV., for 1831, p. 147. The following is a table, for different zenith distances, of the Corrections to be added to the Tabular Equatoreal Horizontal Parallax.

Zenith Distance.	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°
Corr. for N.L.	- 0″,03	- 0″,04	- 0″.05	- 0″,06	- 0″,06	- 0″,07	- 0″,08	- 0″,08	- 0″,09	- 0″,09	- 0″,09
Corr. for S.L.	+ 0,10	+ 0,11	+ 0,12	+ 0,12	+ 0,13	+ 0,14	+ 0,15	+ 0,15	+ 0,16	+ 0,16	+ 0,16

The *eighth column* contains the micrometer reading, when one limb of a planet is observed with the micrometer wire, and the other on the fixed wire.

The *ninth column* contains the semidiameters of the Sun and Moon, and of the planets when the discs are of measurable magnitude. The Sun's semidiameter is taken from the Nautical Almanac: the Moon's is interpolated from the Nautical Almanac with second differences. The apparent diameters of Mars, Jupiter, and Saturn in the vertical direction, are given by the micrometer readings of column 8, treated in the same manner as those on the left-hand page, and the semi-diameters of column 9 are found by merely dividing the results by 2. For Venus it is necessary to take account of the apparent figure. This has been done in the manner following, no readier means being at hand. The angle which a circle of latitude through the center of the planet makes with the line joining the cusps, was first inferred from the right-angled spherical triangle, of which two sides are her heliocentric latitude, and the difference between her heliocentric longitude and the Earth's. Then the angle which a declination circle through the center makes with the circle of latitude was found, supposing Venus to be in the ecliptic (which is sufficiently approximate) by means of the right-angled spherical triangle, two parts of which are her right ascension and the obliquity of the ecliptic. The sum or difference of these two angles, according as the position of the planet in longitude conspires or not with the position relative to the ecliptic, in causing the deficiency of the limb, is the angle which the line joining the cusps makes with the circle of declination: and the measured diameter divided by 1 + cosine of this angle is the semidiameter put in column 9. Venus is here supposed horned, or her apparent figure such, that the wire applied to the defective limb is not a tangent to the curved boundary of illumination, but passes through a cusp; as, in fact, was the case in all the observations of 1836. If it happens that the deficient limb is observed on the fixed wire, the circumstance is mentioned in the notes, and the semidiameter calculated as above is set down in column 9, but the value employed for deducing the N.P.D. of the center, is this semidiameter diminished by the excess of the calculated above the measured *diameter*. The tabular semidiameter is used from June 28 to Aug. 2. During part of this time the cusps were too sharp and indistinct to admit of being observed, and in the remaining part an attempt was made, which did not prove satisfactory, to allow for the apparent figure in the observation.

The geocentric N.P.D. of the center in the *tenth column* is deduced from each observation by applying to the apparent zenith distance of column 2, the corrections for refraction, parallax, and semidiameter, and adding $37^{\circ}.47'.8'',28$, the assumed colatitude of the Observatory. The negative sign denotes that the object, when observed, was below the pole. The result is, therefore, the N.P.D. of the center of the object as viewed from the Earth's center, at the time of passing the middle wire, affected by uncorrected instrumental errors and errors of observation, as also by any errors in the assumed values of the constants employed in the calculations.

The pages immediately following those whose contents have now been explained, contain as follows:

1°. *Vertical Diameters of the Sun and Moon*, in page 98. These are the differences of the Zenith Distances, corrected for refraction and parallax, of the N. and S. limbs, (deficiency of illumination being allowed for in the case of the Moon,) and are, therefore, true geocentric diameters, the effect of applying these corrections to the limbs being, to reduce their places to those in which they would be seen from the Earth's center.

The diameters of the planets have not been separately arranged, as they may be obtained at once by taking, without alteration, the numbers in column 9, right-hand page, of the *Zenith Distances* &c., and doubling them.

2°. *Mean North Polar Distances of Stars observed in* 1836, *as deduced from each day's observation*, in pages 100–109. These mean N.P.D. are referred to the beginning of the year, and are deduced from the apparent N.P.D. in column 10, right-hand page, of the *Zenith Distances observed* &c., by applying corrections obtained by the following methods. For stars included in the list of the Nautical Almanac, the corrections to be *added* to the apparent N.P.D., are found by subtracting the mean declinations (Jan. 1, 1836) in that work, from the apparent declinations derived from the same work by interpolating for the times of observation. For stars not in the Nautical Almanac, but included in the Catalogue of the Royal Astronomical Society, the corrections to be added to the apparent N.P.D. without change of sign, are calculated by the formula

$$Aa' + Bb' + Cc' + Dd'.$$

Log A, log B, log C, log D, are taken from the Nautical Almanac; and log a', log b', log c', log d', from the Society's Catalogue. For stars not in that Catalogue, the corrections (also to be added to the apparent N.P.D.) are calculated by the following formula, depending on the expressions for a', b', c', d', given in p. xvii. of the Preface:

$$\text{Correction} = A \times (N^{\circ}.\ log = 9{,}6375) \times sin\ N.P.D. - A\ .\ sin\ R.A.\ cos\ N.P.D.$$
$$+ B\ cos\ R.A.\ cos\ N.P.D. + C \times (N^{\circ}.\ log = 1{,}3020)\ cos\ R.A. - D\ sin\ R.A.$$

Where the resulting mean N.P.D. is included in brackets, no use is made of it in deducing the concluded mean.

The results by the same star, when observed above and when below the pole, are arranged separately to serve for correcting the assumed co-latitude. Also, the results by direct observations are separated from those by reflexion observations of the same star, for the purpose of exhibiting the effect of the discordance of zenith points before spoken of, and furnishing data for applying a correction.

3°. *Catalogue of the Concluded Mean North Polar Distances, Jan.* 1, 1836, *with the Annual Variations*, in pages 110 and 111. The concluded mean is the mean (corrected as stated below) of all the preceding mean N.P.D.; and the annual variations are taken from the Astronomical Society's Catalogue, or are computed by the formula there used.

The corrections applied to the mean of all the different determinations of mean N.P.D., to obtain the concluded mean, are for error of colatitude and for discordance of zenith points. The former is due to the error of the barometer before mentioned; in consequence of which the colatitude was determined with too small a correction for refraction, and required to be increased by 0″,15. The colatitude affected with this error, being printed in the skeleton forms for calculation, is still used, for convenience, in calculating the North Polar Distances, and the error is afterwards allowed for by adding 0″,15 to the mean determination of N.P.D., when the stars are observed above the pole, and subtracting the same quantity when observed below. The correction for discordance of zenith points is applied on the following principle.

The discordance is of such a nature, that the circle reading for zenith point is in general less by a star observed south of the zenith than by a star observed north of the zenith. This may, with some probability, be ascribed to the mechanical action of the weight of the telescope as attached to the circle; the tendency of which plainly is to cause the two ends of the telescope to *drop* in different degrees according to different positions. If such effect took place, the consequence would be, that when the object-end is any where south of zenith, the telescope would require to be turned, for bisecting an object, a little farther in the direction of the graduation than if the cause of inequality did not exist. The circle readings, both for the reflexion and direct observations, and consequently the zenith point, would thus be *diminished.* The contrary would be the case, if the object-end were north of the zenith. Whether or not this be the true explanation, it may be presumed that the zenith point, adopted according to the rule in page xliv, is very nearly that which would be found if there were no discordance. Hence, if M be the adopted zenith point, and Z the zenith point resulting from a particular double observation, $M-Z$ is the error of the circle reading in defect, both for the reflexion and the direct observation, supposing both to be equally affected by the inequality. By this quantity the N.P.D. is too small as determined by the direct observation, and too great as determined by the reflexion observation; so that the excess of the latter determination above the other is twice $M-Z$. These inferences apply as well to observations north as to those south of the zenith, by taking $M-Z$ a negative quantity when Z is greater than M, and the N.P.D. negative when the star is observed below the pole. The following table shews for each star the mean value of $M-Z$, deduced from all the double observations taken of it in the course of the year. The different values of $M-Z$, from which the mean is derived, are readily obtained from the lists in pages 100–109, by halving the algebraic excess of the N.P.D. by reflexion above the N.P.D. by direct vision.

Mean Excess for each Star of the Adopted Zenith Point above the Zenith Points given by Observation.

Star's Name.	No. of Obs.	Zen. Dist.	Means of M – Z.	Star's Name.	No. of Obs.	Zen. Dist.	Means of M – Z.
		° ′	″			° ′	″
γ Ursæ Majoris SP.	3	– 73 . 8	+ 0,23	Polaris SP..........	54	– 39 . 20	– 0,11
α Cassiopeiæ SP...	8	– 72 . 6	– 0,02	λ Ursæ Minoris....	1	– 36 . 35	– 0,62
υ Ursæ Majoris SP.	15	– 67 . 57	– 0,48	Polaris................	14	– 36 . 12	– 0,39
γ Cassiopeiæ SP...	2	– 67 . 55	– 0,49	δ Ursæ Minoris	15	– 34 . 22	– 0,41
31 Camelopardali SP................	1	– 67 . 54	+ 0,29	ε Ursæ Minoris	2	– 30 . 4	– 0,14
				ζ Ursæ Minoris	5	– 26 . 4	– 0,46
α Lyncis SP........	1	– 66 . 12	+ 2,00	β Ursæ Minoris ...	6	– 22 . 36	– 0,71
α Cephei SP........	1	– 65 . 52	– 0,02	β Cephei	9	– 17 . 37	– 0,57
α Ursæ Majoris SP.	10	– 65 . 7	+ 0,22	δ Draconis	1	– 15 . 9	+ 0,10
ε Cassiopeiæ SP....	5	– 64 . 54	– 0,44	α Ursæ Majoris....	14	– 10 . 25	– 0,49
π² U. Majoris SP..	1	– 62 . 52	– 0,36	α Cephei.............	28	– 9 . 40	– 0,43
α Draconis SP.. ...	3	– 62 . 36	+ 0,32	η Draconis	2	– 9 . 40	– 0,24
β Cephei SP........	1	– 57 . 55	– 0,11	γ Cassiopeiæ.........	6	– 7 . 37	– 0,45
λ Draconis SP......	4	– 57 . 32	– 0,62	δ Cassiopeiæ.........	2	– 7 . 10	– 0,21
β U. Minoris SP...	4	– 52 . 57	– 0,13	δ Ursæ Majoris.....	4	– 5 . 43	– 0,43
A.S.C. 874. SP.....	2	– 45 . 4	+ 0,75	α Cassiopeiæ	5	– 3 . 26	– 0,21

Star's Name.	No. of Obs.	Zen. Dist.	Means of M−Z.	Star's Name.	No. of Obs.	Zen. Dist.	Means of M−Z.
		° ′	″			° ′	″
γ Ursæ Majoris	7	− 2 . 23	− 0,28	α Ophiuchi	8	+ 39 . 31	+ 0,26
η Ursæ Majoris	18	+ 2 . 5	+ 0,11	ε Virginis	1	40 . 22	− 0,05
α Persei	3	2 . 56	− 0,48	γ Aquilæ	7	41 . 59	+ 0,26
σ Persei	2	4 . 47	+ 0,31	ρ Leonis	2	42 . 3	− 0,47
δ Persei	1	4 . 57	+ 0,43	α Aquilæ	11	43 . 45	+ 0,07
Capella	19	6 . 23	+ 0,30	α Orionis	6	44 . 50	+ 0,43
α Cygni	8	7 . 31	+ 0,45	α Serpentis	2	45 . 15	+ 0,85
ν Cygni	1	11 . 40	+ 0,46	β Aquilæ	5	46 . 12	+ 0,51
α Lyræ	31	13 . 34	+ 0,36	Procyon	4	46 . 33	− 0,39
β Lyræ	8	19 . 2	+ 0,61	α Ceti	2	48 . 45	− 0,77
Castor	3	19 . 58	+ 0,19	δ Aquilæ	1	49 . 24	− 0,71
β Tauri	6	23 . 45	+ 0,45	γ Ceti	2	49 . 39	− 0,44
Pollux	12	23 . 47	+ 0,21	α Aquarii	5	53 . 18	− 0,12
α Andromedæ	11	24 . 1	+ 0,76	δ Ophiuchi	1	55 . 28	+ 0,53
ε Bootis	9	24 . 26	+ 0,04	μ Virginis	2	57 . 8	− 0,27
α Coronæ Borealis	4	24 . 56	+ 0,55	β Aquarii	16	58 . 28	+ 0,46
ε Geminorum	1	26 . 55	+ 0,11	φ Aquarii	1	59 . 7	+ 1,03
α Arietis	3	29 . 31	+ 0,82	α Hydræ	1	60 . 8	+ 0,95
Arcturus	37	32 . 10	+ 0,35	κ Virginis	1	61 . 42	+ 1,15
β Arietis	2	32 . 12	+ 0,22	Spica	19	62 . 29	+ 0,29
Aldebaran	1	36 . 1	+ 0,73	α^1 Capricorni	6	65 . 11	− 0,01
β Leonis	3	36 . 43	+ 0,59	α^2 Capricorni	7	65 . 13	+ 0,32
α Herculis	6	37 . 37	+ 0,73	α^2 Libræ	3	67 . 32	+ 0,23
α Pegasi	4	37 . 52	− 0,11	δ Corvi	5	67 . 47	+ 0,12
Regulus	15	+ 39 . 26	− 0,21	β^1 Scorpii	1	+ 71 . 31	− 0,66

It having appeared from the Observations of 1835, (Introduction, p. xxxviii), that the law and amount of the correction for discordance of zenith points were not sensibly altered by a change of position of the telescope on the circle, I have not made separate tables for the two positions of 1836. On Sept. 19, when the change of position was made, a leaden weight, attached externally to the eye-end of the telescope, was taken off and not afterwards replaced. This circumstance would be likely to affect the amount of correction: but when it was subsequently discovered (Oct. 18) that a counterpoise in the interior of the telescope had been a long while unsteady, and must, by frequently shifting its position, have at least equally affected the zenith point, and in a way that could not be taken account of, it was thought best to form but one table for all the observations of the year.

From the preceding table, the one below for corrections to be applied according to the N.P.D., was deduced as follows. A line of abscissæ being drawn, on which the zenith distances of all the above stars were set off, and the values of $M-Z$ being taken for ordinates, a curve was traced by hand among all the points thus determined, so as to approach nearer to any point, the greater the number of observations by which its position was assigned. It was found that a simple curve, having three points of contrary flexure, and nearly symmetrical with respect to 0° of zenith distance, would satisfy this condition sufficiently well. Ordinates of this curve were then measured at stated intervals, and the measures with the corresponding N.P.D. tabulated as follows, to serve for correcting by interpolation at any proposed N.P.D. From what has been already said, the sign of the correction for a direct observation is the same as that of $M-Z$, or the ordinate of the curve, and for a reflexion observation the contrary.

Corrections to be applied Algebraically to N.P.D., 1836, *for Discordance of Zenith Points.*

N.P.D.	Corr. for *D.*	Corr. for *R.*	N.P.D.	Corr. for *D.*	Corr. for *R.*	N.P.D.	Corr. for *D.*	Corr. for *R.*
°	"	"	°	"	"	°	"	"
−35	−0,12	+0,12	+15	−0,45	+0,45	+65	+0,40	−0,40
−30	−0,13	+0,13	20	−0,49	+0,49	70	+0,35	−0,35
−25	−0,15	+0,15	25	−0,48	+0,48	75	+0,31	−0,31
−20	−0,17	+0,17	30	−0,43	+0,43	80	+0,25	−0,25
−15	−0,20	+0,20	35	−0,22	+0,22	85	+0,22	−0,22
−10	−0,22	+0,22	40	+0,14	−0,14	90	+0,21	−0,21
− 5	−0,26	+0,26	45	+0,33	−0,33	95	+0,20	−0,20
0	−0,30	+0,30	50	+0,39	−0,39	100	+0,19	−0,19
+ 5	−0,35	+0,35	55	+0,41	−0,41	105	+0,19	−0,19
10	−0,40	+0,40	60	+0,42	−0,42	110	+0,18	−0,18

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF THE CENTERS OF THE SUN, MOON, AND PLANETS, OBSERVED IN THE YEAR 1836.

These, with the *Greenwich Mean Solar Times of Observation*, are given in pages 113–126, and are compared with the places interpolated from the Nautical Almanac, or the Meridian Ephemeris of the Royal Astronomical Society.

When both limbs of the Sun or a planet have been observed with the Transit, and when the apparent disc of a planet is very small, the *Apparent Right Ascension of Center* is taken without alteration from column 9, right-hand page, of *Transits as observed* &c.: when one limb only is observed, the right ascension of center is inferred by applying to the observed Æ. of the limb, the sidereal time occupied by the transit of the semidiameter, as given in the Meridian Ephemeris. In the case of the Moon, whether both limbs have been observed, or only one, the Æ. of center is deduced from the observed Æ. of the limb (defect of illumination being already corrected for) by applying $\frac{1}{15}$ × *Moon's semidiameter* × *sec. of declination*, the semidiameter being interpolated with second differences from the Nautical Almanac, and the declination at transit being taken from the section of Moon-culminating stars in the same work.

The *Apparent North Polar Distance of Center* is deduced from column 10, right-hand page, of *Zenith Distances observed* &c., by correcting the N.P.D. of that column, or, in the instances of the Sun and Moon, the mean of the determinations by the same passage, for error of colatitude and discordance of zenith points. For the Moon an additional correction is applied, which in every other instance is insensible. The N.P.D. by the observation is that for the time of passing the middle wire; and as this time does not in general coincide with the meridian passage, a correction is required for the change of the Moon's N.P.D. in the interval. By numerous transits of known stars observed with the circle and Molyneux, and referred by comparison of clocks to Hardy, the intervals between the meridian passage and the passage across the middle wire, were found for various polar distances, and by *graphical* interpolation the intervals corresponding to the Moon's N.P.D. at the times of observation were inferred. The variations of N.P.D. in these intervals were then calculated from the variations for 10^m in the hourly ephemeris of the Nautical Almanac, and applied as corrections to the observed N.P.D. This process was gone through for every different position of the circle. To give an idea of the amount of correction, it may be stated, that from March 24 to July 18, the transit over the middle wire preceded at a mean the meridian transit by $3^s,5$; from July 18 to Sept. 19, by $8^s,5$; from Sept. 19 to Dec. 12, by $6^s,0$; after which to the end of the year, the correction for error of the Circle's position was insensible.

The Greenwich Mean Solar Time corresponding to any Right Ascension is found by adding to the equivalent, in solar time, of the sidereal time representing the Right Ascension, the next preceding mean time of the transit of the first point of Aries, diminished by $23^s,48$, as Cambridge is $23^s,54$ East of Greenwich.

For the Sun, the Greenwich Mean Solar Time is always the time of transit of the center. When, therefore, only one limb is observed with the Transit, the mean solar time is calculated by the above rule from the apparent Æ. of center, obtained, as before mentioned, by correcting for semidiameter. When the N.P.D. is observed and the Æ. not observed, the mean solar time is deduced from the tabular Æ. at apparent noon, corrected for the difference of longitude of the Greenwich and Cambridge Observatories. This correction is applied by subtracting 0,00654 × the horary variation of Æ. given in the Meridian Ephemeris, from the tabular Æ. It is to be understood that both limbs are observed, unless one is specified (the 1st or 2d in transit observations; the N. or S. in circle observations) in the columns headed *Limb observed.*

The Greenwich Mean Solar Time for the transit observations of the Moon, is always the time of transit of the limb specified as the observed limb in the second column; and for the circle observations, it is the time of transit of the center, which is deduced from the time for the limb by applying the solar equivalent of the sidereal time, occupied by the transit of the semidiameter, which is taken from the section of Moon-culminating stars in the Nautical Almanac. When the limb is not observed with the Transit, (as happened on Oct. 19) the Greenwich Mean Solar Time of Transit of center is calculated from the Æ. of the limb in the Nautical Almanac, corrected for the time occupied by the passage of the semidiameter and for the difference of meridians.

For Mercury, Venus, and Mars, the Greenwich Mean Solar Time is the time of transit of the limb. When, however, these planets are observed with the Circle only, the mean solar time is the time of transit of center calculated from the Æ. of center in the Meridian Ephemeris, corrected for difference of meridians. On July 22 Venus was observed at two wires only of the Transit, and the observation having been reduced, the resulting Greenwich mean solar time of transit of limb was inadvertently suffered to stand, though the observation itself was struck out of the *Transits*. The error of tables it gave was + $0^s,91$.

For all the other planets the Greenwich Mean Solar Time is the time of transit of the center, and is calculated either from the observed Æ., or, when the transit was not taken, from the Æ. of the Meridian Ephemeris corrected for difference of meridians. It sometimes happened that the small planets were observed with the Circle only at times beyond the limits of the accurate ephemeris of their places in the Nautical Almanac. In these cases the Greenwich Mean Solar Time was deduced by interpolation from preceding and succeeding transit observations. Thus, on May 10 the mean solar time of transit of Vesta is inferred from those of May 9, 11, and 12: on May 16, from those of May 13, 14, 18, 19. The mean solar times of the transits of Ceres Nov. 3 and 5, are interpolated from the times on Oct. 27 and Nov. 7, 8, and 10. These interpolated values are the most correct that could be procured under the circumstances, but cannot be considered accurate.

The *seconds of tabular R.A. and N.P.D.*, from which the *Errors of Tables* are deduced, have been obtained for the Sun and Planets, by subtracting from the Æ. and N.P.D. of the Meridian Ephemeris, 0,00654 × the horary variations, whenever the observations were made within the limits of the calculated places of that work. Where this was not the case, the tabular places have been interpolated for the time of meridian passage from the daily Ephemeris of the Nautical Almanac. As the accurate ephemeris of the small planets in the Nautical Almanac extends only to a certain time before and after opposition, the tabular places could not be exhibited collaterally with the observed places beyond those limits.

For the Moon, the seconds of tabular Æ. of the center have been found from the Æ. of the limb in the section of Moon-culminating stars in the

Nautical Almanac, by subtracting 0,00654 × the difference of Æ. for 1^h of longitude there given, and then applying the same correction for semidiameter as that applied to the observed Æ. of the limb. Thus, in fact, the observed and tabular Æ. of the limb are compared together, though for other purposes the Æ. of the center is exhibited. When a limb was observed whose Æ. was not given under the head of Moon-culminating stars in the Nautical Almanac, the Æ. of the center was interpolated for the time of observation with second differences from the hourly ephemeris. The seconds of tabular N.P.D. of center have always been derived by interpolating for the Greenwich Mean Solar Time of transit of center with second differences from the hourly ephemeris of the Nautical Almanac.

After the column of Errors of Tables of the Moon in Æ., there is an additional one exhibiting the effect on the Errors in Æ., which would be produced by increasing the Moon's tabular semidiameter $\frac{1}{1000}$ part: and following the column of errors of tables in N.P.D. are three others, the first of which exhibits in like manner the effect on the errors in N.P.D. of increasing the tabular semidiameter $\frac{1}{1000}$ part; the next exhibits the effect of increasing the parallax $\frac{1}{1000}$ part; and the third, the effect of supposing the Earth spherical with the same equatoreal radius. The last-mentioned column is formed by taking the parallax computed, as before stated, supposing the ratio of the axes to be that of 297 to 298, from the parallax separately computed, supposing the Earth to be spherical, and gives the means of readily altering that ratio if required.

The *Comparisons of Clocks and Chronometers*, tabulated in page 128, are used in the reduction of Observations with the Equatoreal and Clock Graham, or with a detached telescope. They were made by first noting the corresponding hours, minutes, and seconds of the clock and chronometer *U*, and then estimating the fraction of a second by the interval of a beat of one and a beat of the other, as compared with the interval between consecutive beats of the clock.

OBSERVATIONS OF THE SOLAR ECLIPSE OF MAY 15, 1836.

These observations consist of micrometer measures of differences of North Polar Distance, and are tabulated, (pages 131–136,) together with the times of observation, in different Series, according to the objects of which the intervals of N.P.D. were observed. The series were selected in accordance with instructions drawn up for observing the Eclipse at the Greenwich Observatory, with a copy of which I was favored by the Astronomer Royal. The times were noted by the clock Graham, and are converted first into apparent sidereal time* by the data mentioned in the Prefatory Remarks, p. 130, and then in the usual way into Greenwich Mean Solar Time. The observations were all made with the Declination and Hour Circles clamped, and those of which the micrometer readings are inclosed by the same lines, were taken with the instrument in the same position. In every instance (except one, Series v. No. 2) the micrometer wire was applied to the object at its passage across the middle wire, by which means errors arising from want of parallelism of the moveable wires to the fixed wire, and from error of position of the wire frame, are avoided. The fixed wire was previously adjusted to make an equatoreal star pass as exactly as possible along it.

The *Differences of North Polar Distances* (pages 137 and 138) deduced from these observations and corrected for refraction, were calculated with values of the micrometer readings at coincidence with the fixed wire, and with a mean value of the micrometer revolutions, adopted upon the following considerations.

On May 9 I made the subjoined observations for determining the coincidences of the micrometer wires with the fixed wire. The graduated face of the Declination Circle was East. The micrometer wire designated by the letter *a*, is that which has the greatest range in the upper part of the field of view in this position of the Circle, being moved by the upper micrometer-head: the other, designated by the letter *b*, is moved by the lower micrometer-head.

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* I have used the expression "*apparent* sidereal time," in the sense in which "apparent Æ." is sometimes used, to signify that the time is dependent on the assumed position of the Equinox.

	Micrometer Wire *a* touching Fixed Wire.	Micrometer Wire *b* touching Fixed Wire.
	r	r
	10,031	10,060
	9,973	9,995
	10,041	10,059
	9,977	9,999
	10,032	10,059
	9,973	9,998
Means	10,005	10,028

The coincidence of *a* agrees with that of the same wire in Jan. 1836, as stated in p. lxii of the Introduction to the Volume for 1835. On May 12 I observed the coincidences again, the graduated face of the Declination Circle being West, and obtained for *a* 9^{r},991, and for *b* 10^{r},022. In both these sets of observations the micrometer wires appeared perfectly parallel to the fixed wire. On examining, however, the wires on June 18, *a* was sensibly not parallel to the fixed wire, and the coincidences taken on that day at the middle vertical wire (graduation West) were for *a* 9^{r},929 and for *b* 10^{r},023. It appeared, therefore, that the coincidence of *b* was steady, but that that of *a* had considerably altered. This liability to change not being suspected at the time of the Eclipse, the coincidences were not taken immediately after the observations. I have no reason to think the change could have occurred between May 15 and June 18, as the micrometer was not used in that interval. It is more probable that it was produced gradually by the extraordinary use of the micrometer in the Eclipse observations. I have, therefore, ventured to adopt the mean of the determinations of May 12 and June 18, viz. 9^{r},960, as likely to be attended with the least error. The coincidence reading employed for *b* is 10^{r},022.

On May 12 I observed as follows for determining the values of the micrometer revolutions. The graduated face of the Declination Circle was East. The micrometer wires being each set 20^{r} from the fixed wire, were with the fixed wire directed in succession to the apex of the spire of Grantchester church.

Wire directed to Mark.	Pointer Reading.	Microscope *A* (two bisections).	Microscope *B* (two bisections).	Concluded Reading.
	° ′	′ ″	′ ″	° ′ ″
Upper Wire (*a*).....	52 . 25	3 . 12,9 3 . 13,6	4 . 51,1 4 . 50,3	52 . 29 . 1,95
Fixed Wire...........	52 . 15	2 . 1,5 2 . 1,1	3 . 45,1 3 . 43,0	52 . 17 . 52,67
Lower Wire (*b*).....	52 . 5	0 . 52,1 0 . 53,2	2 . 43,5 2 . 42,6	52 . 6 . 47,85
Lower Wire (*b*).....	52 . 5	0 . 55,0 0 . 54,9	2 . 41,9 2 . 44,3	52 . 6 . 49,02
Fixed Wire..........	52 . 15	2 . 2,6 2 . 4,7	3 . 43,8 3 . 43,6	52 . 17 . 53,67
Upper Wire (*a*).....	52 . 25	3 . 17,9 3 . 17,4	4 . 57,3 5 . 0,0	52 . 29 . 8,15

° ′ ″

Hence, Mean Reading for Upper Wire (*a*) .... 52 . 29 . 5,06

.... Fixed Wire..................... 52 . 17 . 53,17

.... Lower Wire (*b*)............... 52 . 6 . 48,44

′ ″	″
20 revolutions of (*a*) = 11 . 11,89,	one revolution of (*a*) = 33,595,
20 revolutions of (*b*) = 11 . 4,73,	one revolution of (*b*) = 33,237.

The mean of the two values is 33″,416. This result is not quite satisfactory, as the second observation with wire *a* does not well agree with the first.

Other similar observations were made on May 9, 10, and 13, with the same position of the Declination Circle, all of which concurred in giving a larger value of the micrometer revolution for the upper than for the lower micrometer. The mean of five determinations gave for the former 33″,466, and for the latter 33″,333, the mean of the two being 33″,400. This difference does not appear to be owing to any difference in the screws; for I have since found, that when the graduation of the Declination Circle is *West*, the greater value of the micrometer revolutions determined by the same means, belongs to the upper micrometer, and consequently to that which before had been the lower. It would appear, therefore, to be owing to some instrumental inequality remaining uncorrected in the concluded reading of the declination circle. This view I confirmed by bisecting with the same micrometer wire, in a fixed position of the instrument, two small stars, differing about 14^r in N.P.D., and conveniently separated in Æ. When this was done repeatedly with both micrometer wires, there appeared no decided difference between the micrometer revolutions they separately gave as measures of the interval of N.P.D. between the stars. For these reasons the mean above stated, viz. $33'',400$, is used for both micrometers throughout the Eclipse observations. It should be observed, that this value is determined without corrections for runs or for errors of division of the declination circle. Recent calculations have shewn that the former correction would have increased the value, and the other have diminished it.

The micrometer readings increase as the wires move from the fixed wire towards the micrometer-heads, and when corrected by the coincidence readings, have their zero at the fixed wire. The correction to the reading of U, the upper micrometer, (which is the same as b) is $-0^r,022$, and that to the reading of L, the lower, is $+0^r,040$, the adopted coincidence readings increased by 10^r, being respectively $10^r,022$ and $9^r,960$. Consequently the correction to the sum of two readings inclosed by the same lines is $+0^r,018$; and by multiplying the sum thus corrected by $33'',400$, the measured interval of N.P.D. is converted into arc. In one instance (No. 3 of Series v.) the same micrometer wire was applied to both objects, and the interval of N.P.D. was obtained in arc by merely multiplying the difference of the micrometer readings by $33'',400$. No attempt has been made to apply a correction in the instance of No. 2. Series v, in which the observation was taken at the fifth wire, as, for the reasons already stated, the coincidence reading at that wire could not be certainly known.

The amount of refraction for all positions of the Sun during the Eclipse was considered equal to $A \times \tan zen. dist.$, and the value of A was calculated in the same manner as for the Circle observations, supposing the mean indications of the attached and free thermometers each to be $67^\circ,5$, and the height of the barometer 30,536 inches, which it was observed to be at 20^m past noon. The thermometer reading was inferred from observations of free thermometers just before the Eclipse and at the time of greatest obscuration, and though not very accurate, is sufficiently near for the purpose. The calculation gave for A, 57″,42. A spherical triangle being formed, of which the three angles are at Z the zenith, P the pole, and S the Sun's center, and an arc ZQ being drawn through Z perpendicularly on PS, the refraction in N.P.D. $= 57'',42 \times \tan QS = 57'',42 \times \tan (PS - PQ)$. After obtaining PQ from the given hour angle and colatitude, the refraction at any given N.P.D. is readily calculated by this formula. At the time of the Eclipse the Sun's declination was 19° N. nearly: all the observations may be considered as taken between 70°.45′ and 71°.15′ of N.P.D. The differences of the refractions at these polar distances were calculated for various hour angles, separated by intervals of 30^{m}, and the results tabulated as follows.

Differences of Refraction at 70°.45′ *and* 71°.15′ *of N.P.D.*

Hour Angle.	Difference of Refraction.	Hour Angle.	Difference of Refraction.
h. m.	″	h. m.	″
1 . 30	0,75	3 . 30	1,03
2 . 0	0,79	4 . 0	1,20
2 . 30	0,84	4 . 30	1,49
3 . 0	0,92	5 . 0	1,96

From this table the differences of refraction for 30′ difference of N.P.D. were obtained by interpolation for the hour angles set down in pages 137 and 138, and a part of each result bearing the same ratio to the whole as the corresponding measure of difference of N.P.D. to 30′, was added to that difference to correct it for refraction. The hour angles are approximately the intervals of *sidereal* time between apparent noon and the times of observation, and consequently have been obtained without taking account of the Sun's motion in Æ.; but as the correction for refraction is in every instance very small, no sensible error is induced by this omission.

The particulars of *Observations of the beginning and end of the Eclipse, and of the bisection of two Solar Spots by the Moon's Limbs*, are given in

p. 139, together with the calculated Greenwich Mean Solar Times of observation. To make observations of the times of disappearance and reappearance of these spots available at any place, like occultations of fixed stars by the Moon, for determining terrestrial longitude, I observed, both before and after the Eclipse, the differences of Æ. of the centers of the Spots and the Sun's 1 L., and the differences of N.P.D. of their N. and S. points and the Sun's N.L., to obtain at any intermediate time the positions of their centers relative to the Sun's center. The account of the observations and of the calculations founded on them, are given in pages 140–142, and require no additional explanation.

The Greenwich Mean Solar Times of observations of a few *Eclipses of Jupiter's Satellites*, and of *Occultations of Stars by the Moon,* are recorded in pages 144 and 145. The *Calculation of the Occultations* (pp. 146–155) has been conducted in the same manner as in previous volumes of the Cambridge Observations, by the method described in the Volumes for 1830 and 1831. Precisely the same method is applied to the observations of the disappearance of one of the Solar Spots and reappearance of another, the right ascensions and declinations of the Spots at the times of observation being known by means of the auxiliary observations already described.

The final equations resulting from the *Calculations of the beginning and end of the Solar Eclipse of May* 15, (p. 153–155.) were formed by equating the apparent distances of the centers of the Sun and Moon at the instants of observation, calculated for the place of observation from data in the Nautical Almanac, to the sum of their apparent semidiameters, calculated also from data in the same work. It may be remarked, that these equations agree sufficiently well with the equations resulting from the calculations relating to the Solar Spots.

All the Observations contained in this Volume were originally set down in pencil writing in small memorandum books, which are carefully preserved for future reference.

TRANSITS AS OBSERVED,

AND

CALCULATION

OF THE

APPARENT RIGHT ASCENSIONS.

1836.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Mar. 24	Polaris.......... (cloudy)	35.18,4	43.37,2	51.50,8	0. 5,6	8.24,2	16.31,2	1 . 24 . 43,8		B.
	Venus 1 L...... (wind loud)	55,4	9,8	23,7	37,9	52,1	6,0	2 . 42 . 20,1		B.
	Aldebaran..... (very cloudy)	30,4	44,8	58,8	......	27,1	40,6	4 . 26 . 54,5	0,0	B.
	ζ Tauri	49,4	4,0	18,3	32,9	47,3	1,9	5 . 28 . 15,9		B.
	☽ 1 L.................	27,3	43,0	58,3	13,8	29,4	44,6	5 . 47 . 59,9		B.
	η Geminorum	57,0	11,7	26,3	40,8	55,8	10,1	6 . 5 . 24,4		B.
	μ Geminorum.........	0,7	15,4	30,1	44,6	59,2	13,7	6 . 13 . 28,2		B.
	Jupiter 1 L...........	12,3	......	42,0	......	11,4	......	6 . 29 . 40,8		B.
	Jupiter 2 L	......	29,8	......	59,3	......	29,1	6 . 29		B.
	Procyon .... (blazing)	44,7	58,1	11,8	25,2	39,1	52,2	7 . 31 . 6,1		B.
	Pollux...............	13,1	28,3	44,0	59,1	14,6	29,9	7 . 35 . 45,2		B.
	α Hydræ ...... (wind loud)	33,4	47,2	1,1	14,6	28,1	41,8	9 . 19 . 55,2		B.
	Regulus..............	39,5	53,3	7,2	21,0	35,1	49,0	10 . 0 . 2,4		B.
	β Leonis .... (cloudy)	42,7	57,1	11,1	25,0	39,1	52,7	11 . 41 . 6,5		B.
Mar. 25	Aldebaran............	29,1	43,2	57,3	11,3	25,6	39,2	4 . 26 . 53,4		B.
	Rigel	39,1	52,6	6,3	20,0	33,5	47,1	5 . 7 . 0,7		B.
	ζ Tauri	48,1	2,7	17,1	31,4	46,0	0,2	5 . 28 . 14,5		B.
	η Geminorum	55,6	10,4	25,1	39,6	54,3	8,7	6 . 5 . 23,1		B.
	(*a*) Jupiter 1 L..........	30,2	......	59,9	......	29,3	......	6 . 29 . 57,9		B.
	Jupiter 2 L.	......	47,7	......	17,3	......	46,9	6 . 29		B.
	Procyon	43,6	57,1	10,9	24,2	37,9	51,1	7 . 31 . 4,5		B.
	Pollux................	11,7	27,1	42,3	57,8	13,3	28,3	7 . 35 . 43,7		B.
	α Hydræ	32,2	45,8	59,4	13,2	27,1	40,4	9 . 19 . 54,0		B.
	Regulus	38,2	52,1	6,0	19,6	33,8	47,2	10 . 0 . 1,1		B.
	Vesta	16,1	29,7	44,0	57,7	12,0	25,3	11 . 57 . 39,1		B.
Mar. 26	β Leonis	40,1	54,1	8,3	22,1	36,1	50,2	11 . 41 . 3,9		B.
	Vesta	20,3	34,1	48,1	2,1	16,0	29,7	11 . 56 . 43,5		B.
	Polaris SP. .... (unsteady)	34.42,8	42.56,6	51. 5,4	59.27,4	7.40,8	......	13 . 24 . 10,4	+ 2 . 44,82	B.
	Spica........... (blazing)	......	......	0,8	14,1	28,2	41,7	13 . 16 . 55,1	− 13,70	B.
	Saturn 1 L.	59,3	......	27,0	......	53,3	......	14 . 10 . 21,4		B.
	Saturn 2 L.	......	16,4	......	43,7	......	11,2	14 . 10		B.
Mar. 27	Polaris......... (very cloudy)	35.13,8	......	51.45,2	0. 3,8	8.21,4	......	1	+ 6 . 9,81	B.
Mar. 29	⊙ 1 L......... (very cloudy)	19,3	32,9	46,4	59,9	13,8	27,3	0 . 31 . 40,6		B.
	Aldebaran	23,6	37,7	51,6	5,9	20,1	33,7	4 . 26 . 47,8		B.
	β Tauri	44,8	0,2	15,6	30,9	46,4	1,7	5 . 16 . 16,8		B.
	μ Geminorum.........	53,7	9,0	23,1	37,7	52,5	7,1	6 . 13 . 21,2		B.
	Jupiter 1 L.	48,9	......	18,4	......	48,0	... ..	6 . 31 . 17,1		B.
	Jupiter 2 L.	......	6,6	......	35,5	......	5,8	6 . 31		B.
	Procyon	37,6	51,3	5,1	18,8	32,2	45,6	7 . 30 . 58,8		B.
	Pollux................	6,2	21,3	37,1	52,8	7,9	22,9	7 . 35 . 38,2		B.
	α Hydræ	27,1	40,3	54,0	7,9	21,4	35,0	9 . 19 . 48,3		B.
	Regulus..............	33,3	46,6	0,7	14,2	28,3	42,0	9 . 59 . 55,9		B.
	γ Leonis..............	48,8	3,1	17,4	31,8	46,5	0,9	10 . 11 . 15,1		B.
	☽ 1 L.................	9,7	23,9	38,5	52,6	7,2	21,2	10 . 19 . 35,3		B.
	k Leonis..............	38,2	52,1	6,2	20,2	34,4	48,1	10 . 38 . 2,0		B.
	χ Leonis	28,9	42,2	56,1	9,8	23,4	36,7	10 . 56 . 50,1		B.
Mar. 30	Jupiter 1 L.	10,8	......	40,1	......	9,3	......	6 . 31 . 38,2		B.
	Jupiter 2 L.	......	27,6	......	57,3	......	26,7	6 . 31		B.
	Procyon..............	36,2	49,9	3,5	17,1	30,8	44,2	7 . 30 . 57,3		B.
	Pollux	5,1	20,1	35,3	50,7	6,3	21,3	7 . 35 . 36,5		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
March 21. 23^{h}. The Transit was reversed and Errors of Collimation and Level were determined.
The Transit levelled, March 28. 1^{h}.

(*a*) Disturbed by the loudness of the wind.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
1. 0. 4,46	2,96	+10,5	48,05	5,49	17,44	1,35	16,92	1. 0. 5,03	Polaris.
2.41.37,86			38,24					2.41.55,31	Venus 1 L.
4.26.12,70			13,08	30,38	17,30			4.26.30,25	Aldebaran.
5.27.32,81			33,15					5.27.50,38	ζ Tauri.
5.47.13,75			14,05					5.47.31,30	☽ 1 L.
6. 4.40,87			41,20					6. 4.58,46	η Geminorum.
6.12.44,56			44,89					6.13. 2,16	μ Geminorum.
6.28.56,62			58,34					6.29.15,63	Jupiter's center.
6.28.59,40									
7.30.25,31			25,78	43,13	17,35			7.30.43,12	Procyon.
7.34.59,17			59,43	16,74	17,31			7.35.16,79	Pollux.
9.19.14,49			15,08	32,50	17,42			9.19.32,52	α Hydræ.
9.59.21,07			21,49	38,93	17,44			9.59.38,97	Regulus.
11.40.24,89			25,28	42,75	17,47			11.40.42,86	β Leonis.
4.26.11,30			11,68	30,36	18,68	1,28	18,28	4.26.30,20	Aldebaran.
5. 6.19,90			20,49	39,17	18,68			5. 6.39,04	Rigel.
5.27.31,43			31,77					5.27.50,34	ζ Tauri.
6. 4.39,55			39,88					6. 4.58,48	η Geminorum.
6.29.14,32			16,14					6.29.34,77	Jupiter's center.
6.29.17,30									
7.30.24,19			24,66	43,12	18,46			7.30.43,34	Procyon.
7.34.57,75			58,01	16,72	18,71			7.35.16,70	Pollux.
9.19.13,16			13,75	32,49	18,74			9.19.32,53	α Hydræ.
9.59.19,72			20,14	38,91	18,77			9.59.38,95	Regulus.
11.56.57,70			58,10					11.57.17,02	Vesta.
11.40.22,11			22,47	42,75	20,28	1,33	19,45	11.40.42,57	β Leonis.
11.56. 1,97			2,34					11.56.22,45	Vesta.
12.59.25,39	27,97		43,93	5,15	21,22			1. 0. 4,10	Polaris SP.
13.16.14,28			14,86	34,90	20,04			13.16.35,05	Spica.
14. 9.40,25			42,59					14.10. 2,83	Saturn's center.
14. 9.43,77									
1. 0. 0,86	58,18		43,27	5,07	21,80		20,78	1. 0. 4,11	Polaris.
0.31. 0,03			0,50			1,37	23,71	0.31.24,24	⊙ 1 L.
4.26. 5,77			6,12	30,31	24,19			4.26.30,08	Aldebaran.
5.15.30,91			31,14	55,28	24,14			5.15.55,15	β Tauri.
6.12.37,76			38,05					6.13. 2,12	μ Geminorum.
6.30.33,10			34,82					6.30.58,90	Jupiter's center.
6.30.35,97									
7.30.18,49			18,93	43,05	24,12			7.30.43,07	Procyon.
7.34.52,34			52,56	16,65	24,09			7.35.16,71	Pollux.
9.19. 7,72			8,28	32,44	24,16			9.19.32,52	α Hydræ.
9.59.14,43			14,81	38,88	24,07			9.59.39,09	Regulus.
10.10.31,94			32,24					10.10.56,53	γ Leonis.
10.18.52,63			52,99					10.19.17,29	☽ 1 L.
10.37.20,17			20,53					10.37.44,85	*k* Leonis.
10.56. 9,60			10,02					10.56.34,35	χ Leonis.
6.30.54,60		+10,7	56,19			1,45	25,06	6.31.21,64	Jupiter's center.
6.30.57,20									
7.30.17,00			17,45	43,04	25,59			7.30.42,96	Procyon.
7.34.50,75			50,97	16,64	25,67			7.35.16,49	Pollux.

Error of Collimation = $-0'',1$.

Level Error = $-0'',65$. From March 26 = $-1'',26$.

Meridian Error by consecutive Transits of Polaris SP. and Polaris on March 26 and 27, allowing $0^s,74$ for clock rate and change of Æ. From March 30, by the Transits of Polaris SP., Polaris, and Polaris SP. on March 30 and 31.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Mar. 30	α Hydræ	25,3	39,1	52,7	6,4	19,7	33,4	9 . 19 . 47,1		B.
	(a) Regulus	31,6	45,4	59,2	13,2	26,7	40,2	9 . 59 . 54,3		B.
	γ Leonis	47,1	1,6	16,1	30,5	44,9	59,2	10 . 11 . 13,5		B.
	χ Leonis	27,3	40,8	54,4	8,3	22,0	35,4	10 . 56 . 49,1		B.
	(b) ☽ 1 L.	34,3	48,8	2,9	16,7	31,0	44,6	11 . 10 . 58,5		B.
	ν Virginis	19,7	33,9	47,1	0,9	14,5	28,0	11 . 37 . 41,4		B.
	β Leonis ..... (wind very loud)	34,6	48,7	2,9	17,0	31,1	44,5	11 . 40 . 58,2		B.
	Vesta	42,4	56,3	10,2	24,0	37,8	51,6	11 . 53 . 5,7		B.
	Polaris SP. ...... (cloudy)	34.38,4	42.52,2	......	59.15,8	......	15.45,6	13 . 24 . 5,2	– 1,20	B.
	(c) Saturn 1 L.	54,1	......	22,6	......	50,1	.....	14 . 9 . 17,8		B.
	Saturn 2 L.	......	12,2	......	39,4	......	7,2	14 . 9		B.
Mar. 31	⊙ 2 L.	......	55,0	8,4	22,1	36,0	49,2	0 . 41 . 2,9	– 6,78	B.
	Polaris	35.10,2	43.25,6	51.42,4	59.54,8	......	16.21,4	1 . 24 . 35,2	+ 1 . 23,22	B.
	Rigel	30,5	44,2	57,7	11,5	25,1	38,9	5 . 6 . 52,2		B.
	Jupiter 1 L.	32,3	......	1,9	......	31,3	......	6 . 32 . 0,3		B.
	Jupiter 2 L.	......	49,6	......	19,2	......	48,5	6 . 31		B.
	Procyon	34,7	48,3	2,1	16,0	29,3	42,5	7 . 30 . 56,1		B.
	Pollux	3,3	18,4	34,0	49,2	5,0	20,1	7 . 35 . 35,0		B.
	α Hydræ	23,8	37,4	51,1	5,0	18,6	32,0	9 . 19 . 45,2		B.
	Regulus	30,1	43,7	57,4	11,3	25,3	39,0	9 . 59 . 52,4		B.
	ν Virginis	18,7	32,1	45,7	59,1	12,9	26,7	11 . 37 . 39,9		B.
	β Leonis	33,1	47,0	1,2	15,1	29,2	43,0	11 . 40 . 56,7		B.
	Vesta	49,4	3,5	16,9	31,1	45,0	58,8	11 . 52 . 12,7		B.
	☽ 1 L.	33,0	46,8	0,8	14,6	28,6	42,3	12 . 1 . 56,0		B.
	c Virginis	54,1	7,9	21,1	34,8	48,3	2,0	12 . 12 . 15,3		B.
	γ Virginis	14,2	27,9	41,3	55,0	8,3	21,6	12 . 33 . 35,1		B.
	Polaris SP.	......	42.51,6	50.57,2	59.18,8	7.30,2	......	13 . 24 . 4,8	– 1 . 38,19	B.
	Spica	26,0	39,6	53,3	7,2	20,9	34,2	13 . 16 . 48,0		B.
	Saturn 1 L.	38,5	......	6,1	......	33,4	......	14 . 9 . 0,9		B.
	Saturn 2 L.	......	55,5	......	22,6	......	50,1	14 . 8		B.
Apr. 2	⊙ 1 L.	45,9	59,6	13,2	26,9	40,4	53,7	0 . 46 . 7,2		B.
	⊙ 2 L.	55,1	8,9	22,1	35,9	49,3	3,0	0 . 48 . 16,5		B.
	Polaris .... (cloudy)	35. 7,8	43.24,4	51.43,6	59.54,8	8.11,4	16.21,4	1 . 24 . 33,2		B.
	Venus 1 L.	26,8	41,1	55,4	10,0	24,3	38,7	3 . 23 . 53,1		B.
	Polaris SP. .... (very cloudy)	......	......	50.57,2	59.12,6	7.29,2	......	13 . 23 . 58,8	– 6 . 9,69	B.
	Spica	23,6	37,1	50,9	4,4	18,1	32,0	13 . 16 . 45,8		B.
	m Virginis	50,6	4,1	17,8	31,2	45,1	58,4	13 . 33 . 11,9		B.
	☽ 2 L.	20,0	33,9	48,0	2,2	16,8	30,2	13 . 48 . 44,0		B.
	Saturn 1 L.	5,0	......	32,2	......	59,8	......	14 . 8 . 27,0		B.
	Saturn 2 L.	......	21,7	......	49,3	......	16,6	14 . 8		B.
	ε Bootis	35,1	50,2	5,5	20,7	35,9	51,0	14 . 38 . 6,2		B.
										B.
Apr. 3	ε Bootis	33,5	49,1	4,0	19,3	34,6	49,5	14 . 38 . 5,1		B.
	(d) α^2 Libræ	36,1	50,2	4,1	17,7	32,1	46,1	14 . 41 . 59,6		B.
	☽ 2 L.	7,0	21,2	35,6	50,2	5,1	19,2	14 . 44 . 33,4		B.
Apr. 4	⊙ 1 L.	59,8	13,2	27,2	40,6	54,5	8,0	0 . 53 . 21,4		B.
	⊙ 2 L. .... (cloudy)	9,2	22,9	36,4	50,0	4,0	15,7	0 . 55	+ 6,77	B.
	Polaris .... (very cloudy)	......	43.22,4	......	59.49,6	8.10,2	16.15,8	1	– 2 . 4,68	B.
	Procyon	29,2	42,6	56,2	9,8	23,5	36,9	7 . 30 . 50,4		B.
	Pollux	57,4	13,1	28,3	43,6	59,2	14,3	7 . 35 . 29,5		B.
	α Hydræ	18,2	31,6	45,6	59,1	13,0	26,3	9 . 19 . 40,0		B.
	Regulus .... (blazing)	24,2	38,1	51,8	6,0	19,7	33,3	9 . 59 . 47,1		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, April 4. 1^h.

(a) The wind too loud to allow the observation to be good.

(b) By comparison with the Tables the observation was 1^m wrong, and is altered accordingly.

(c) During this and the two following observations of March 31, the wind was loud and the sky very cloudy.

(d) Hurried: not satisfactory.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
9 . 19 . 6,24		+ 10,7	6,82	32,43	25,61	1,45	25,06	9 . 19 . 32,44	α Hydræ.
9 . 59 . 12,94			13,33	38,88	25,55			9 . 59 . 38,99	Regulus.
10 . 10 . 30,41			30,71					10 . 10 . 56,39	γ Leonis.
10 . 56 . 8,19			8,62					10 . 56 . 34,34	χ Leonis.
11 . 10 . 16,69			17,11					11 . 10 . 42,85	☽ 1 L.
11 . 37 . 0,78			1,22					11 . 37 . 26,98	ν Virginis.
11 . 40 . 16,72			17,09	42,76	25,67			11 . 40 . 42,86	β Leonis.
11 . 52 . 24,00			24,38					11 . 52 . 50,16	Vesta.
12 . 59 . 18,24	20,82		37,08	4,46	27,38			1 . 0 . 2,93	Polaris SP.
14 . 8 . 36,15 14 . 8 . 39,60			38,46					14 . 9 . 4,37	Saturn's center.
0 . 40 . 22,15			22,62			1,40	26,61	0 . 40 . 49,27	⊙ 2 L.
0 . 59 . 54,82	52,14		36,95	4,41	27,46			1 . 0 . 3,62	Polaris.
5 . 6 . 11,44			12,02	39,07	27,05			5 . 6 . 38,93	Rigel.
6 . 31 . 16,45 6 . 31 . 19,10			18,07					6 . 31 . 45,06	Jupiter's center.
7 . 30 . 15,57			16,03	43,02	26,99			7 . 30 . 43,08	Procyon.
7 . 34 . 49,29			49,51	16,62	27,11			7 . 35 . 16,56	Pollux.
9 . 19 . 4,73			5,31	32,42	27,11			9 . 19 . 32,46	α Hydræ.
9 . 59 . 11,31			11,70	38,87	27,17			9 . 59 . 38,89	Regulus.
11 . 36 . 59,30			59,74					11 . 37 . 27,03	ν Virginis.
11 . 40 . 15,04			15,41	42,76	27,35			11 . 40 . 42,70	β Leonis.
11 . 51 . 31,05			31,43					11 . 51 . 58,73	Vesta.
12 . 1 . 14,59			15,07					12 . 1 . 42,38	☽ 1 L.
12 . 11 . 34,79			35,26					12 . 12 . 2,58	c Virginis.
12 . 32 . 54,77			55,29					12 . 33 . 22,63	γ Virginis.
12 . 59 . 18,33	20,91		37,17	4,36	27,19			1 . 0 . 4,54	Polaris SP.
13 . 16 . 7,03			7,62	34,96	27,34			13 . 16 . 35,01	Spica.
14 . 8 . 19,72 14 . 8 . 22,73			21,81					14 . 8 . 49,24	Saturn's center.
0 . 45 . 26,70 0 . 47 . 35,83		+ 11,2	31,74			1,43	29,15	0 . 47 . 0,94	⊙'s center.
0 . 59 . 53,80	51,12		35,22	4,33	29,11			1 . 0 . 4,43	Polaris.
3 . 23 . 9,91			10,24					3 . 23 . 39,59	Venus 1 L.
12 . 59 . 14,76	17,34		34,36	4,36	30,00			1 . 0 . 4,29	Polaris SP.
13 . 16 . 4,56			5,18	34,98	29,80			13 . 16 . 35,12	Spica.
13 . 32 . 31,30			31,91					13 . 33 . 1,87	*m* Virginis.
13 . 48 . 2,16			2,78					13 . 48 . 32,75	☽ 2 L.
14 . 7 . 46,00 14 . 7 . 49,20			48,22					14 . 8 . 18,21	Saturn's center.
14 . 37 . 20,65			20,90	51,04	30,14			14 . 37 . 50,92	ε Bootis.
14 . 37 . 19,30			19,54	51,06	31,52	1,53	30,58	14 . 37 . 51,05	ε Bootis.
14 . 41 . 17,99			18,66	50,13	31,47			14 . 41 . 50,18	α^2 Libræ.
14 . 43 . 50,24			50,92					14 . 44 . 22,44	☽ 2 L.
0 . 52 . 40,67 0 . 54 . 49,80		+ 11,4	45,70			1,49	32,10	0 . 54 . 17,86	⊙'s center.
0 . 59 . 49,82	46,86		30,67	44,9	33,82			1 . 0 . 2,83	Polaris.
7 . 30 . 9,80			10,29	42,96	32,67			7 . 30 . 42,86	Procyon.
7 . 34 . 43,63			43,86	16,55	32,69			7 . 35 . 16,43	Pollux.
9 . 18 . 59,12			59,73	32,37	32,64			9 . 19 . 32,41	α Hydræ.
9 . 59 . 5,74			6,16	38,83	32,67			9 . 59 . 38,88	Regulus.

Error of Collimation = − 0″,1.

Level Error = − 1″,26. From April 3 = 1″,40.

Meridian Errors by Transits of Polaris and Polaris SP. April 2, allowing 0^s,66 for clock rate (change of Æ = 0); and by Transits of Polaris and Polaris SP. April 4, allowing 0^s,75 for clock rate.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	*m. s.*	*m. s.*	*m. s.*	*m. s.*	*m. s.*	*h. m. s.*	*m. s.*	
Apr. 4	*k* Leonis	29,6	44,0	57,9	11,7	25,8	39,7	10.37.53,4		B.
	β Leonis	27,7	41,5	55,8	9,8	23,7	37,6	11.40.51,6		B.
	Vesta	26,9	40,6	54,6	8,6	22,8	36,3	11.48.50,1		B.
	c Virginis	48,4	2,3	15,8	29,2	42,9	56,2	12.12. 9,9		B.
	γ Virginis	8,7	22,3	35,8	49,2	3,1	16,2	12.33.29,4		B.
	Polaris SP.	34.28,2	42.44,2	50.51,6	59. 8,8	7.22,4	15.40,2	13.23.53,6		B.
	m Virginis	47,7	1,3	15,0	28,7	42,3	55,7	13.33. 9,4		B.
	Saturn 1 L.	30,7	......	58,1	......	25,5	......	14. 7.53,0		B.
	Saturn 2 L.	......	47,9	......	14,6	......	42,3	14. 7.....		B.
Apr. 5	⊙ 1 L.	37,1	50,7	4,6	18,1	31,8	45,3	0.56.58,9		B.
	⊙ 2 L. (very cloudy)	45,8	0,0	13,8	27,3	41,1	54,4	0.59. 8,0		B.
Apr. 7	Polaris SP.	......	42.37,6	50.49,7	59. 7,4	7.19,8	15.35,6	13.23.53,2	−4. 6,49	C.& B.
	Saturn 1 L.	37,8	......	4,9	......	32,7	......	14. 6.59,9		B.
	Saturn 2 L.	......	54,4	......	22,2	......	49,2	14. 6.....		B.
	ε Bootis (cloudy)	27,6	43,1	58,3	13,8	29,0	43,8	14.37.58,9		B.
	α^2 Libræ	30,2	44,2	58,0	12,1	26,3	40,1	14.41.53,9		B.
Apr. 8	⊙ 1 L. (cloudy)	29,8	43,5	57,2	10,9	24,6	38,1	1. 7.51,7		B.
	⊙ 2 L. (cloudy)	39,7	53,1	6,8	20,4	33,9	47,5	1.10. 1,2		B.
	Venus 1 L. (unsteady)	35,7	50,3	5,0	19,4	34,2	48,8	3.52. 3,3		B.
	Aldebaran	9,1	23,2	37,3	51,3	5,7	19,2	4.26.33,3		B.
	Procyon	23,1	36,7	50,3	3,9	17,3	30,8	7.30.44,2		B.
	Pollux	51,7	6,9	22,3	37,6	53,1	8,2	7.35.23,5		B.
	Regulus	18,3	32,1	46,0	59,9	13,6	27,2	9.59.41,1		B.
Apr. 9	α Hydræ (cloudy)	9,9	23,3	38,2	51,7	5,6	18,9	9.19.32,3		B.
	Regulus	16,7	30,6	44,5	58,3	12,4	26,1	9.59.39,4		B.
	β Leonis	20,1	33,9	48,2	1,9	16,2	30,1	11.40.44,1		B.
	Vesta	36,3	49,9	4,2	18,0	32,1	45,8	11.44.59,9		B.
Apr. 11	Rigel	14,3	28,1	41,8	55,3	9,1	22,6	5. 6.36,1		B.
	(*a*) β Tauri (clouds)	26,7	41,9	56,6	12,3	27,2	42,4	5.15.57,7		B.
	Jupiter 1 L.	18,4	......	48,0	......	17,4	......	6.36.46,8		B.
	Jupiter 2 L.	......	35,9	......	5,9	......	35,1	6.36.....		B.
	Procyon	18,4	32,2	45,8	59,1	13,0	26,3	7.30.39,8		B.
	Pollux	47,1	2,4	17,7	33,1	48,5	3,8	7.35.19,2		B.
	α Hydræ	7,9	21,2	34,9	48,8	2,3	16,0	9.19.29,3		B.
	Regulus	13,8	27,6	41,4	55,3	9,3	23,1	9.59.36,9		B.
	β Leonis	16,9	31,1	45,1	58,9	13,2	26,9	11.40.41,0		B.
	Vesta	12,8	26,9	41,0	54,9	8,6	22,4	11.43.36,4		B.
	Polaris SP.	34.22,8	42.36,4	50.41,6	59. 3,2	7.14,6	15.32,2	13.23.50,4		B.
	Saturn 1 L.	24,9	......	52,3	......	19,9	......	14. 5.47,1		B.
	Saturn 2 L.	......	41,6	......	9,2	......	36,7	14. 5.....		B.
Apr. 13	Polaris SP.	34.20,4	42.35,2	50.41,6	58.59,8	7.14,4	15.28,6	13.23.47,4		B.
	Saturn 1 L.	48,1	......	15,7	......	42,4	......	14. 5.10,2		B.
	Saturn 2 L.	......	4,9	......	32,3	......	59,7	14. 4.....		B.
	ε Bootis	18,7	33,9	49,2	4,7	19,8	34,8	14.37.49,9		B.
	α^2 Libræ	21,1	35,0	49,1	2,9	17,3	30,7	14.41.44,9		B.
Apr. 15	⊙ 1 L. (very cloudy)	3,1	16,5	30,3	44,0	57,7	11,4	1.33.24,9		B.
	⊙ 2 L. (very cloudy)	13,1	26,9	40,2	54,0	7,9	21,3	1.35.35,0		B.
	α Hydræ	1,5	15,0	28,7	42,2	56,1	9,7	9.19.23,0		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, April 11. 2^h.

(*a*) The observation not good: not used for clock error.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
10 . 37 . 11,72		+ 11,4	12,11			1,49	32,10	10 . 37 . 44,87	*k* Leonis.
11 . 40 . 9,68			10,07	42,76	32,69			11 . 40 . 42,90	*β* Leonis.
11 . 48 . 8,56			8,96					11 . 48 . 41,79	Vesta.
12 . 11 . 29,25			29,75					12 . 12 . 2,61	*c* Virginis.
12 . 32 . 49,25			49,80					12 . 33 . 22,68	*γ* Virginis.
12 . 59 . 9,86	12,70		30,03	4,56	34,53			1 . 0 . 2,94	Polaris SP.
13 . 32 . 28,59			29,20					13 . 33 . 2,14	*m* Virginis.
14 . 7 . 11,82			14,01					14 . 7 . 46,99	Saturn's center.
14 . 7 . 14,93									
0 . 56 . 18,07			23,10				33,59	0 . 57 . 56,75	⊙'s center.
0 . 58 . 27,20									
12 . 59 . 7,39	10,23		27,56	4,90	37,34	1,61	36,42	1 . 0 . 4,86	Polaris SP.
14 . 6 . 18,82			21,00					14 . 6 . 58,37	Saturn's center.
14 . 6 . 21,93									
14 . 37 . 13,50	13,39		13,74	51,12	37,38			14 . 37 . 51,14	*ε* Bootis.
14 . 41 . 12,11			12,79	50,21	37,42			14 . 41 . 50,20	α^2 Libræ.
1 . 7 . 10,82			16,06			1,60	38,10	1 . 8 . 54,24	⊙'s center.
1 . 9 . 20,37									
3 . 51 . 19,53			19,85					3 . 51 . 58,21	Venus 1 L.
4 . 25 . 51,30			51,68	30,19	38,51			4 . 26 . 30,07	Aldebaran.
7 . 30 . 3,76			4,25	42,89	38,64			7 . 30 . 42,85	Procyon.
7 . 34 . 37,62			37,85	16,48	38,63			7 . 35 . 16,46	Pollux.
9 . 58 . 59,75			0,17	38,80	38,63			9 . 59 . 38,94	Regulus.
9 . 18 . 51,41			52,01	32,31	40,30	1,49	39,58	9 . 19 . 32,17	*α* Hydræ.
9 . 58 . 58,29			58,69	38,79	40,10			9 . 59 . 38,89	Regulus.
11 . 40 . 2,07			2,44	42,75	40,31			11 . 40 . 42,75	*β* Leonis.
11 . 44 . 18,03			18,41					11 . 44 . 58,72	Vesta.
5 . 5 . 55,33		+9,6	55,83	38,91	43,08	1,55	42,64	5 . 6 . 38,80	Rigel.
5 . 15 . 12,11			12,27	55,08	42,81			5 . 15 . 55,25	*β* Tauri.
6 . 36 . 2,65			4,36					6 . 36 . 47,43	Jupiter's center.
6 . 36 . 5,63									
7 . 29 . 59,23			59,60	42,84	43,24			7 . 30 . 42,72	Procyon.
7 . 34 . 33,11			33,26	16,42	43,16			7 . 35 . 16,39	Pollux.
9 . 18 . 48,63			49,13	32,29	43,16			9 . 19 . 32,37	*α* Hydræ.
9 . 58 . 55,34			55,65	38,77	43,12			9 . 59 . 38,94	Regulus.
11 . 39 . 59,02	58,90		59,30	42,75	43,45			11 . 40 . 42,70	*β* Leonis.
11 . 42 . 54,71			54,99					11 . 43 . 38,39	Vesta.
12 . 59 . 3,03	6,82		21,41	4,97	43,56			1 . 0 . 4,89	Polaris SP.
14 . 5 . 6,05			8,12					14 . 5 . 51,67	Saturn's center.
14 . 5 . 9,17									
12 . 59 . 1,06	4,85	10,4	20,66	5,14	44,48	1,52	45,72	1 . 0 . 7,20	Polaris SP.
14 . 4 . 29,10			31,25					14 . 5 . 17,86	Saturn's center.
14 . 4 . 32,30									
14 . 37 . 4,43			4,61	51,21	46,60			14 . 37 . 51,25	*ε* Bootis.
14 . 41 . 3,00			3,61	50,30	46,69			14 . 41 . 50,26	α^2 Libræ.
1 . 32 . 43,99		10,7	49,40			1,50	48,77	1 . 34 . 38,27	⊙'s center.
1 . 34 . 54,06									
9 . 18 . 42,31			42,87	32,23	49,36			9 . 19 . 32,22	*α* Hydræ.

Error of Collimation = – 0″,1.

Level Error = – 1″,40. From April 9. = –1″,91.

The Meridian Error by Polaris SP. and *ε* Bootis April 7. is still 11″,4. By *β* Leonis and Polaris SP. April 11. the Meridian Error is 9″,6, allowing 0s,1 for clock rate during the interval of the Transits.

April 13. Meridian Error by Polaris SP. compared with Polaris April 15, allowing 4s,07 for clock rate and change of Æ. April 15, by Polaris SP. and Polaris, allowing 0s,65 for clock rate and change of Æ.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Apr. 15	Regulus	7,5	21,4	35,1	48,9	2,9	16,6	9 . 59 . 30,4		B.
	Vesta	43,5	57,2	11,4	25,5	39,8	53,2	11 . 41 . 7,3		B.
	Polaris SP........ (flaring)	34.19,2	42.29,4	50.36,8	58.54,4	7. 6,2	15.27,6	13 . 23 . 43,4		B.
	Saturn 1 L.	11,0	......	38,1	......	5,8	......	14 . 4 . 33,1		B.
	Saturn 2 L.	......	27,6	......	55,1	......	22,5	14 . 4		B.
	Arcturus. .... (blazing)	40,1	53,8	8,4	22,6	37,4	51,3	14 . 8 . 5,8		B.
	Polaris.... (very great motion)	34.51,2	43.14,6	51.25,4	59.33,8	7.50,4	15.58,6	1 . 24 . 13,2		B.
Apr. 16	⊙ 1 L.................	43,2	57,1	10,7	24,4	38,2	51,8	1 . 37 . 5,4		B.
	⊙ 2 L.................	53,1	7,0	20,8	34,5	48,3	2,1	1 . 39 . 15,6		B.
	Aldebaran	57,2	11,1	25,0	39,2	53,5	7,2	4 . 26 . 21,1		B.
	Venus 1 L.............	33,2	48,3	2,9	17,8	33,1	47,4	4 . 30 . 2,1		B.
Apr. 21	⊙ 1 L.	10,4	23,9	37,8	51,6	5,8	19,4	1 . 55 . 33,1		B.
	⊙ 2 L..... (hazy and unsteady)	21,1	34,9	48,8	2,3	16,4	30,1	1 . 57 . 43,9		B.
	Pollux .... (hazy)	31,7	46,9	2,6	17,7	33,1	48,2	7 . 35 . 3,4		B.
	Polaris .... (cloudy, unsteady)	......	42.58,8	51.15,6	59.28,2	......	15.50,4	1	+ 2 . 3,48	B.
Apr. 22	⊙ 1 L....... (very cloudy)	......	......	......	34,4	48,7	2,1	1 . 59 . 15,9	– 20,75	B.
	⊙ 2 L. .... (unsteady)	3,9	17,8	31,8	45,3	59,2	13,0	2 . 1 . 26,7		B.
	β Tauri	8,8	24,2	39,6	54,9	10,4	26,0	5 . 15 . 40,7		B.
	Jupiter 1 L. } .. (very faint)	17,7	......	46,7	......	16,8	......	6 . 42 . 45,3		B.
	Jupiter 2 L. }	......	34,9	......	4,5	......	33,4	6 . 42		B.
	Procyon	1,7	15,1	28,4	42,2	56,0	9,3	7 . 30 . 22,9		B.
	κ Geminorum	47,9	2,5	17,3	32,1	47,0	1,8	7 . 34 . 16,7		B.
	(*a*) Regulus .... (blazing)	57,1	11,0	24,7	38,1	52,3	5,9	9 . 59 . 19,7		B.
	Vesta	23,9	37,4	52,0	5,7	19,8	33,2	11 . 37 . 47,1		B.
	β Leonis	0,1	14,2	28,1	42,1	56,3	10,0	11 . 40 . 24,1		B.
	Polaris SP........ (flaring)	34. 8,6	42.22,4	50,26,8	58.45,2	6.57,8	15.14,4	13 . 23 . 30,2		B.
	Saturn 1 L. } ..... (cloudy)	58,9	......	26,4	......	54,1	......	14 . 2 . 21,1		B.
	Saturn 2 L. }	......	15,7	......	42,3	......	10,3	14 . 2		B.
	Arcturus ...... (blazing)	29,1	43,3	57,9	12,2	26,4	41,0	14 . 7 . 55,3		B.
Apr. 23	Jupiter 1 L. } .. (very faint)	53,4	......	23,0	......	52,9	......	6 . 43 . 21,4		B.
	Jupiter 2 L. }	......	11,2	......	40,5	......	9,7	6 . 43		B.
Apr. 25	(*b*) ⊙ 1 L..... (hazy and indistinct)	4,0	17,8	31,9	45,7	59,1	12,6	2 . 10 . 26,2		B.
	(*c*) Aldebaran	43,5	57,9	11,8	25,8	39,7	53,5	4 . 26 . 8,0		B.
	(*c*) Venus 1 L.	23,7	38,9	53,9	8,6	23,9	38,8	5 . 12 . 53,7		B.
	Jupiter 1 L. } (extremely faint)	7,0	......	36,2	......	5,9	......	6 . 44 . 34,8		B.
	Jupiter 2 L. }	......	24,1	......	52,8	......	22,3	6 . 44		B.
	☽ 1 L.	59,4	14,0	28,6	43,1	57,7	12,1	9 . 55 . 26,4		B.
	(*d*) γ Leonis	7,9	22,4	37,1	51,9	6,1	20,1	10 . 10 . 34,7		B.
	ρ Leonis	25,1	38,6	52,8	6,3	20,1	33,5	10 . 23 . 47,2		B.
	Vesta .... (hazy)	......	31,8	45,7	59,5	13,5	27,2	11 . 37 . 41,1	– 6,97	B.
Apr. 26	Polaris SP. ..... (unsteady)	33.59,2	42.13,4	50.23,8	58.42,6	6.53,2	15.10,8	13 . 23 . 25,4		B.
	Arcturus .... (very cloudy)	23,1	37,4	51,7	6,3	20,6	34,7	14 . 7 . 49,1		B.
Apr. 27	Venus 1 L. (very cloudy & faint)	......	......	21,4	36,9	51,9	6,9	5 . 23 . 21,5	– 15,06	B.
	α Orionis .. (flaring and hazy)	28,4	42,2	55,7	9,5	23,4	36,6	5 . 46 . 50,2		
	Procyon .... (clouds)	......	......	......	......	48,8	2,1	7 . 31 . 15,5	– 27,10	B.
	Regulus	49,3	3,1	17,2	30,7	44,9	58,2	10 . 0 . 12,1		B.
	γ Leonis	5,2	19,7	34,1	48,4	3,2	17,3	10 . 11 . 31,6		B.
	ρ Leonis	22,1	36,0	49,4	3,2	17,1	30,7	10 . 24 . 44,1		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, April 18. 1^{h}.; and April 25. 1^{h}. April 26. 23^{h}. the clock was put forward 1^{m}.

(*a*) Confused: the observation is unsatisfactory.
(*b*) The four last wires mere surmise.
(*c*) Very faint and unsteady.
(*d*) The intervals not satisfactory: the observer supposed the small star was taken by mistake at some of the wires.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0ʰ.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
9 . 58 . 48,98		+ 10,7	49,34	38,72	49,38	1,50	48,77	9 . 59 . 38,73	Regulus.
11 . 40 . 25,41			25,74					11 . 41 . 15,24	Vesta.
12 . 58 . 56,71	0,50		16,76	5,52	48,76			1 . 0 . 6,34	Polaris SP.
14 . 3 . 52,00			54,10					14 . 4 . 43,75	Saturn's center.
14 . 3 . 55,07									
14 . 7 . 22,77			23,06	12,61	49,55			14 . 8 . 12,71	Arcturus.
0 . 59 . 35,31	31,37		16,18	5,63	49,45		50,27	1 . 0 . 6,51	Polaris.
1 . 36 . 24,40			29,80					1 . 38 . 20,17	⊙'s center.
1 . 38 . 34,49									
4 . 25 . 39,19			39,49	30,12	50,63			4 . 26 . 30,04	Aldebaran.
4 . 29 . 17,83			18,04					4 . 30 . 8,59	Venus 1 L.
1 . 54 . 51,71		+ 10,2	57,42			1,52	57,96	1 . 56 . 55,50	⊙'s center.
1 . 57 . 2,50									
7 . 34 . 17,66			17,80	16,24	58,44			7 . 35 . 16,24	Pollux.
0 . 59 . 26,73	21,93		7,45	7,41	59,96	1,50	59,47	1 . 0 . 6,98	Polaris.
1 . 58 . 34,52			40,27					2 . 0 . 39,86	⊙'s center.
2 . 0 . 45,39									
5 . 14 . 54,94			55,09	54,96	59,87			5 . 15 . 54,89	β Tauri.
6 . 42 . 1,62			3,15					6 . 43 . 3,04	Jupiter's center.
6 . 42 . 4,27									
7 . 29 . 42,23			42,61	42,68	60,07			7 . 30 . 42,55	Procyon.
7 . 33 . 32,18			32,36					7 . 34 . 32,30	κ Geminorum.
9 . 58 . 38,40			38,72	38,64	59,92			9 . 59 . 38,81	Regulus.
11 . 37 . 5,59			5,88					11 . 38 . 6,08	Vesta.
11 . 39 . 42,13			42,42	42,70	60,28			11 . 40 . 42,62	β Leonis.
12 . 58 . 46,49	51,10		6,60	7,52	60,92			1 . 0 . 6,88	Polaris SP.
14 . 1 . 40,12			41,96					14 . 2 . 42,31	Saturn's center.
14 . 1 . 42,77									
14 . 7 . 12,17			12,41	12,67	60,26			14 . 8 . 12,76	Arcturus.
6 . 42 . 37,67			39,28				60,97	6 . 43 . 40,67	Jupiter's center.
6 . 42 . 40,47									
2 . 9 . 45,33		+ 10,3	45,63			1,47	63,91	2 . 10 . 49,67	⊙ 1 L.
4 . 25 . 25,74			26,00	30,07	64,07			4 . 26 . 30,18	Aldebaran.
5 . 12 . 8,79			8,94					5 . 13 . 13,17	Venus 1 L.
6 . 43 . 50,98			52,21					6 . 44 . 56,53	Jupiter's center.
6 . 43 . 53,07									
9 . 54 . 43,04			43,28					9 . 55 . 47,80	☽ 1 L.
10 . 9 . 51,45			51,65					10 . 10 . 56,18	γ Leonis.
10 . 23 . 6,23			6,55					10 . 24 . 11,10	ρ Leonis.
11 . 36 . 59,50			59,77					11 . 38 . 4,39	Vesta.
12 . 58 . 41,20	46,52		2,18	8,46	66,28		65,38	1 . 0 . 8,36	Polaris SP.
14 . 7 . 6,13	5,96		6,35	12,70	66,35			14 . 8 . 12,60	Arcturus.
5 . 22 . 36,66			36,81			1,45	6,85	5 . 22 . 43,99	Venus 1 L.
5 . 46 . 9,43			9,78	17,07	7,29			5 . 46 . 16,98	α Orionis.
7 . 30 . 35,03			35,39	42,61	7,22			7 . 30 . 42,70	Procyon.
9 . 59 . 30,78			31,08	38,58	7,50			9 . 59 . 38,53	Regulus.
10 . 10 . 48,50			48,70					10 . 10 . 56,16	γ Leonis.
10 . 24 . 3,23			3,55					10 . 24 . 11,03	ρ Leonis.

Error of Collimation = – 0″,1.

Level Error = – 1″,91. From April 16. = – 2″,35. From April 25. = – 2″,73.

Meridian Error from April 21 by Polaris and Polaris SP. April 21 and 22, allowing 0ˢ,71 for loss of clock and change of Æ.

Meridian Error by Polaris SP. and Arcturus April 26. = 10″,3, and by β Leonis and Polaris SP. April 27. = 10″,2. The former is used from April 25.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Apr. 27.	σ Leonis (cloudy)	53,0	6,6	20,3	34,1	47,4	1,1	11 . 13 . 14,4		B.
	τ Leonis	42,5	55,9	9,8	23,2	37,0	50,2	11 . 20 . 3,9		B.
	☽ 1 L.	9,9	23,8	37,6	51,5	5,6	19,3	11 . 37 . 33,0		B.
	β Leonis	52,9	7,0	20,9	34,9	49,1	2,8	11 . 41 . 16,6		B.
	ο Virginis (very cloudy)	3,5	17,4	30,8	44,8	58,5	11,7	11 . 57 . 25,4		B.
	η Virginis (cloudy)	43,7	57,1	11,0	24,3	38,0	51,2	12 . 12 . 5,0		B.
	(*a*) Polaris SP.	35. 3,2	43.14,6	51.21,8	59.41,2	7.50,6	......	13	+ 8 . 14,04	B.
	Saturn 1 L. (cloudy)	24,8	......	52,7	......	19,8	......	14 . 1 . 47,1		B.
	Saturn 2 L.	......	41,6	......	9,2	......	37,1	14 . 1		B.
	(*b*) Arcturus	21,6	36,2	50,3	4,9	19,4	33,5	14 . 8 . 47,7		B.
Apr. 28	Polaris (very cloudy)	......	43.50,8	......	......	8.38,4	16.44,2	1 . 24 . 57,6	− 8 . 13,82	B.
Apr. 29	(*c*) Jupiter 1 L.	39,3	......	8,9	......	38,4	......	6 . 48 . 7,2		B.
	Jupiter 2 L.	......	56,6	......	26,3	......	55,8	6 . 47		B.
	Procyon	51,2	5,1	18,4	32,1	45,5	59,1	7 . 31 . 12,5		B.
	Pollux	19,9	35,1	50,4	5,9	21,3	36,3	7 . 35 . 51,6		B.
	Regulus	46,4	0,4	14,4	28,1	42,0	55,9	10 . 0 . 9,4		B.
	σ Leonis	50,3	4,1	17,4	30,9	44,8	58,2	11 . 13 . 11,6		B.
	τ Leonis	39,9	53,3	6,9	20,5	34,1	47,6	11 . 20 . 1,1		B.
	Vesta	29,1	43,0	57,1	10,7	25,1	38,0	11 . 36 . 52,3		B.
	β Leonis	49,8	4,1	18,2	31,9	46,1	59,9	11 . 41 . 13,8		B.
	ο Virginis	0,6	14,3	28,2	41,9	55,3	9,2	11 . 57 . 22,6		B.
	η Virginis	40,9	54,5	8,1	21,5	35,2	48,4	12 . 12 . 2,0		B.
	δ Virginis	30,8	44,2	57,9	11,3	24,8	38,2	12 . 47 . 52,0		B.
	Polaris SP.	......	43.10,6	51.19,4	59.38,2	7.46,8	......	13 . 24 . 22,8	− 1 . 38,04	B.
	θ Virginis	......	......	......	18,3	31,9	45,4	13 . 1 . 58,7	− 20,30	C.
	Spica	43,1	57,0	10,5	24,2	38,1	51,9	13 . 17 . 5,4		B.
	(*d*) ☽ 1 L.	......	11,9	25,8	39,6	53,8	7,4	13 . 20 . 21,2	− 6,97	B.
	Saturn 1 L.	47,6	......	15,3	......	42,9	......	14 . 1 . 10,0		B.
	Saturn 2 L.	......	4,6	......	32,1	......	59,3	14 . 1		B.
	κ Virginis	18,7	32,8	46,2	59,9	13,8	27,3	14 . 4 . 40,9		B.
	Arcturus	18,9	33,2	47,9	2,2	16,6	30,8	14 . 8 . 45,1		B.
Apr. 30	⊙ 1. L. (very cloudy & unsteady)	51,9	5,9	19,6	33,4	47,8	1,9	2 . 30 . 15.3		B.
	⊙ 2. L.	3,7	17,8	31,8	45,5	0,1	13,7	2 . 32 . 27,4		B.
	Procyon	50,0	3,8	17,0	30,5	44,2	57,4	7 . 31 . 11,4		B.
	Pollux	18,3	33,5	49,1	4,5	19,9	34,9	7 . 35 . 50,4		B.
	Vesta (cloudy and faint)	......	......	48,7	2,4	15,8	29,3	11 . 36 . 43,1	− 13,92	B.
	β Leonis (cloudy)	48,5	2,8	17,0	30,7	45,0	58,9	11 . 41 . 12,7		B.
	δ Virginis	29,2	43,1	56,5	10,1	23,4	37,0	12 . 47 . 50,3		B.
	Polaris SP.	34.57,8	43.11,4	51.19,6	59.37,4	7.49,8	......	13 . 24 . 20,2	+ 2 . 44,52	B.
	θ Virginis	36,5	50,1	3,9	17,1	30,8	44,1	13 . 1 . 57,5		B.
	Spica	41,8	55,3	9,1	23,0	36,7	50,1	13 . 17 . 3,8		B.
	Saturn 1 L.	29,4	......	56,6	......	24,2	......	14 . 0 . 51,3		B.
	Saturn 2 L.	......	46,5	......	13,8	......	40,9	14 . 0		B.
	κ Virginis	17,2	30,9	45,1	58,3	12,2	25,8	14 . 4 . 39,4		B.
	(*e*) Arcturus	17,7	32,1	46,3	1,1	15,2	29,2	14 . 8 . 43,6		B.
	☽ 1 L.	51,7	5,8	20,0	34,1	48,5	2,7	14 . 15 . 16,8		B.
May 1	☽ 2 L. (very hazy and faint)	2,0	16,2	31,1	46,1	1,1	15,7	15 . 16 . 30,1		B.
	α Coronæ Borealis (cloudy)	48,1	2,8	17,9	32,8	48,4	3,4	15 . 28 . 18,3		B.
May 2	(*f*) ⊙ 1 L. (unsteady)	26,2	40,7	54,4	8,7	22,4	36,6	2 . 37 . 50,3		B.
	(*g*) ⊙ 2 L.	38,9	53,0	6,2	20,8	35,1	48,9	2 . 40 . 3,0		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, May 2. 2^h.

(*a*) Flaring: last wires not taken on account of clouds.
(*b*) Blazing, then cloudy.
(*c*) The observation appeared by the Tables to be 1^m. wrong, and is altered accordingly.
(*d*) Wire II. was set down 10,9 probably by a mistake of 1^s, and is altered accordingly.
(*e*) Sometimes cloudy, sometimes blazing.
(*f*) Wire IV. was put down 18,7.
(*g*) Wind so loud that the clock could scarcely be heard.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
11 . 12 . 33,84		+ 10,3	34,19			1,45	6,85	11 . 12 . 41,72	σ Leonis.
11 . 19 . 23,21			23,60					11 . 19 . 31,14	τ Leonis.
11 . 36 . 51,52			51,87					11 . 36 . 59,42	☽ 1 L.
11 . 40 . 34,89	34,73		35,16	42,66	7,50			11 . 40 . 42,72	β Leonis.
11 . 56 . 44,59			44,91					11 . 56 . 52,48	o Virginis.
12 . 11 . 24,33			24,76					12 . 11 . 32,35	η Virginis.
12 . 59 . 40,32	45,64		1,30	8,72	7,42			1 . 0 . 8,94	Polaris SP.
14 . 1 . 6,10 14 . 1 . 9,30			8,21					14 . 1 . 15,91	Saturn's center.
14 . 8 . 4,80			5,02	12,70	7,68			14 . 8 . 12,72	Arcturus.
1 . 0 . 18,93	13,39	+ 10,2	58,91	9,23	10,32	1,38	9,67	1 . 0 . 8,64	Polaris.
6 . 47 . 23,45 6 . 47 . 26,23			25,03					6 . 47 . 35,09	Jupiter's center.
7 . 30 . 31,98			32,34	42,58	10,24			7 . 30 . 42,44	Procyon.
7 . 35 . 5,79			5,90	16,12	10,22			7 . 35 . 16,01	Pollux.
9 . 59 . 28,09			28,39	38,55	10,16			9 . 59 . 38,63	Regulus.
11 . 12 . 31,04			31,39					11 . 12 . 41,71	σ Leonis.
11 . 19 . 20,48			20,86					11 . 19 . 31,18	τ Leonis.
11 . 36 . 10,75			11,03					11 . 36 . 21,37	Vesta.
11 . 40 . 31,97			32,24	42,65	10,41			11 . 40 . 42,58	β Leonis.
11 . 56 . 41,73			42,05					11 . 56 . 52,40	o Virginis.
12 . 11 . 21,51			21,93					12 . 11 . 32,30	η Virginis.
12 . 47 . 11,31			11,69					12 . 47 . 22,10	δ Virginis.
12 . 59 . 37,52	42,84		58,34	9,44	11,10			1 . 0 . 8,76	Polaris SP.
13 . 1 . 18,27			18,74					13 . 1 . 29,16	θ Virginis.
13 . 16 . 24,31			24,82	35,13	10,31			13 . 16 . 35,25	Spica.
13 . 19 . 39,65			40,14					13 . 19 . 50,58	☽ 1 L.
14 . 0 . 28,95 14 . 0 . 32,00			30,97					14 . 0 . 41,45	Saturn's center.
14 . 3 . 59,95			0,46					14 . 4 . 10,94	κ Virginis.
14 . 8 . 2,10			2,32	12,71	10,39			14 . 8 . 12,80	Arcturus.
2 . 29 . 33,68 2 . 31 . 45,72			39,97			1,41	11,02	2 . 30 . 51,14	⊙'s center.
7 . 30 . 30,61			30,97	42,57	11,60			7 . 30 . 42,43	Procyon.
7 . 35 . 4,37			4,48	16,11	11,63			7 . 35 . 15,95	Pollux.
11 . 36 . 1,94			2,22					11 . 36 . 13,92	Vesta.
11 . 40 . 30,80			31,07	42,64	11,57			11 . 40 . 42,78	β Leonis.
12 . 47 . 9,94			10,32					12 . 47 . 22,09	δ Virginis.
12 . 59 . 37,22	42,54		58,04	9,89	11,85			1 . 0 . 9,83	Polaris SP.
13 . 1 . 17,15			17,62					13 . 1 . 29,40	θ Virginis.
13 . 16 . 22,83	22,73		23,34	35,13	11,79			13 . 16 . 35,14	Spica.
14 . 0 . 10,37 14 . 0 . 13,73			12,55					14 . 0 . 24,39	Saturn's center.
14 . 3 . 58,42			58,93					14 . 4 . 10,78	κ Virginis.
14 . 7 . 0,74			0,96	12,72	11,76			14 . 7 . 12,81	Arcturus.
14 . 14 . 34,23			34,77					14 . 14 . 46,63	☽ 1 L.
15 . 15 . 46,05			46,66			1,48	12,53	15 . 16 . 0,13	☽ 2 L.
15 . 27 . 33,10			33,24	46,64	13,40			15 . 27 . 46,73	α Cor. Bor.
2 . 37 . 8,48 2 . 39 . 20,84		+ 9,7	14,90				14,01	2 . 38 . 29,07	⊙'s center.

Error of Collimation $= -0'',1$.

Level Error $= -2'',73$. From May 2. $= -2'',69$.

Meridian Error from April 28. by Polaris and Polaris SP. April 28 and 29, allowing $0^s,50$ for clock rate and change of AR. The same by Polaris SP. and Spica, April 30.

Meridian Error from May 2. by Polaris and Polaris SP. May 3 and 4, allowing $0^s,57$ for clock rate and change of AR.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
May 2	Venus 1 L.	18,1	33,0	......	......	18,2	33,6	5 . 46 . 48,4	− 30,2	B.
	Procyon	46,9	0,7	14,2	27,5	41,3	54,8	7 . 31 . 8,1		B.
	Pollux	15,3	30,8	46,1	1,5	17,1	32,1	7 . 35 . 47,4		B.
	Polaris SP.	34.59,8	43.11,4	51.17,6	59.36,2	7.48,4	......	13 . 24 . 21,6	+ 2 . 44,50	B.
	Spica	38,9	52,3	6,3	19,9	33,8	47,2	13 . 17 . 1,1		B.
	Saturn 1 L.	52,9	......	19,9	......	47,5	......	14 . 0 . 14,9		B.
	Saturn 2 L.	......	9,4	......	36,7	......	3,8	14 . 0		B.
	Arcturus	14,6	28,9	43,4	57,8	12,4	26,3	14 . 8 . 40,6		B.
	α^2 Libræ	53,1	7,0	20,9	35,1	48,9	3,2	14 . 42 . 17,1		B.
	θ Libræ	33,8	48,0	1,9	15,7	30,1	44,1	15 . 44 . 58,1		B.
	δ Scorpii	40,8	55,7	10,4	24,8	39,7	54,2	15 . 51 . 8,5		B.
	δ Ophiuchi	50,9	4,6	18,2	31,7	45,1	58,6	16 . 6 . 12,1		B.
	☽ 2 L.	16,4	32,0	47,1	2,1	17,4	32,4	16 . 19 . 47,6		B.
		......								
May 3	(a) ⊙ 1 L. ...... (very unsteady)	14,4	29,1	42,9	56,5	10,9	24,5	2 . 41 . 38,4		B.
	⊙ 2 L.	27,1	41,0	54,9	9,4	23,3	37,2	2 . 43 . 51,1		B.
	Polaris ...... (very cloudy)	......	43.48,6	52. 2,2	0.14,6	......	......	1 . 24 . 50,4	+ 0,55	B.
May 4	Vesta	59,8	13,8	27,7	41,6	55,7	9,7	11 . 36 . 23,1		B.
	Polaris SP. .. (very cloudy)	34.55,6	43.11,2	51.15,4	59.33,6	......	16. 3,2	13	+ 6 . 34,99	B.
	ε Bootis	47,9	2,9	18,3	33,6	48,7	4,1	14 . 38 . 18,9		B.
	α^2 Libræ	50,3	4,4	18,5	32,2	46,3	0,2	14 . 42 . 14,0		B.
May 5	Regulus	37,8	51,4	5,8	19,2	33,2	46,6	10 . 0 . 0,7		B.
May 6	⊙ 1 L.	41,8	56,3	10,5	24,5	38,9	52,9	2 . 53 . 6,6		B.
	⊙ 2 L.	55,1	9,3	23,4	37,6	52,0	6,0	2 . 55 . 19,7		B.
	β Tauri	48,3	3,9	19,1	34,4	49,8	5,1	5 . 16 . 20,3		B.
	Venus 1 L.	43,9	59,1	14,2	29,2	44,9	59,3	6 . 5 . 14,6		B.
	Procyon	40,8	54,3	7,9	21,5	35,2	48,8	7 . 31 . 2,1		B.
	Pollux	9,2	24,7	40,1	55,4	10,8	26,1	7 . 35 . 40,9		B.
	α Hydræ	29,8	43,7	57,2	10,8	24,8	38,2	9 . 19 . 51,4		B.
	Regulus	35,9	49,7	3,7	17,4	31,3	45,2	9 . 59 . 58,7		B.
	(b) Vesta	59,8	13,9	27,7	42,0	55,9	9,5	11 . 36 . 23,2		B.
	β Leonis .... (great motion)	39,5	53,4	7,6	21,7	35,5	49,4	11 . 41 . 3,4		B.
	(c) Polaris SP.	34.52,4	43. 7,6	51.14,8	59.34,2	7.45,6	......	13 . 24 . 18,8	+ 2 . 44,48	B.
	Spica	32,8	46,1	0,1	13,8	27,8	41,2	13 . 16 . 54,8		B.
	(d) Saturn 1 L.	39,9	......	......	20,8	34,9	......	13 . 59 . 1,9	− 3,42	B.
	(d) Saturn 2 L.	......	57,0	10,9	......	......	51,2	13 . 58	+ 4,56	B.
	Arcturus	8,7	23,1	37,3	51,7	6,1	20,3	14 . 8 . 34,6		B.
	5 Serpentis	56,3	10,0	23,5	37,1	50,7	4,0	15 . 11 . 17,3		C.
	(e) α Coronæ Borealis	39,8	55,0	10,2	25,4	40,8	55,7	15 . 28 . 10,8		C.
	(e) α Serpentis	11,0	24,6	38,3	51,8	5,7	18,8	15 . 37 . 32,4		C.
	(e) δ Ophiuchi	44,8	58,2	12,0	25,5	39,0	......	16 . 6 . 6,0	+ 4,50	C.
	(e) Antares	16,4	31,5	46,7	1,4	16,7	31,6	16 . 19 . 46,4		C.
	Polaris ...... (very unsteady)	35.27,6	43.42,2	51.59,6	0.11,4	8.27,8	16.37,4	1 . 24 . 46,6		B.
May 7	⊙ 1 L. ..... (very unsteady)	32,4	46,8	0,8	14,7	29,2	43,1	2 . 56 . 57,0		B.
	⊙ 2 L.	46,0	0,1	14,2	28,1	42,3	56,3	2 . 59 . 10,6		B.
	Rigel (clouds)	......	......	......	16,4	30,2	43,6	5 . 6 . 57,2	− 20,45	B.
	α Orionis	13,8	27,7	41,2	54,7	8,5	22,1	5 . 46 . 35,5		B.
	Venus 1 L. (clouds and wind)	16,9	32,3	......	......	17,9	33,0	6 . 9	+ 7,53	B.
May 9	⊙ 1 L. . (cloudy & very unsteady)	15,2	29,6	43,5	57,7	12,2	26,1	3 . 4 . 40,2		B.
	⊙ 2 L.	28,6	43,1	57,1	11,1	25,3	39,7	3 . 6 . 53,8		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, May 9. 2^h.

(*a*) Almost guess-work, the wind so loud.
(*b*) Confused.
(*c*) Flaring with great motion: very difficult to observe.
(*d*) Confused: the wires in wrong order.
(*e*) Not used for clock error.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
5 . 46 . 3,24		+ 9,7	3,37			1,48	14,01	5 . 46 . 17,74	Venus 1 L.
7 . 30 . 27,65			27,99	42,55	14,56			7 . 30 . 42,46	Procyon.
7 . 35 . 1,47			1,56	16,08	14,52			7 . 35 . 16,04	Pollux.
12 . 59 . 37,00	42,24		56,83	10,89	14,06			1 . 0 . 11,64	Polaris SP.
13 . 16 . 19,93			20,41	35,13	14,72			13 . 16 . 35,24	Spica.
13 . 59 . 33,80			35,68					13 . 59 . 50,55	Saturn's center.
13 . 59 . 36,63									
14 . 7 . 57,72			57,91	12,73	14,82			14 . 8 . 12,79	Arcturus.
14 . 41 . 35,04			35,57	50,54	14,97			14 . 41 . 50,49	α^2 Libræ.
15 . 44 . 15,96			16,50					15 . 44 . 31,48	θ Libræ.
15 . 50 . 24,87			25,48					15 . 50 . 40,46	δ Scorpii.
16 . 5 . 31,60			31,87	46,93	15,06			16 . 5 . 46,87	δ Ophiuchi.
16 . 19 . 2,14			2,76					16 . 19 . 17,77	☽ 2 L.
2 . 40 . 56,67			3,14				15,49	2 . 42 . 18,80	☉'s center.
2 . 43 . 9,15									
1 . 0 . 14,50			55,41	11,62	16,21	1,56	16,91	1 . 0 . 12,38	Polaris.
11 . 35 . 41,63			41,88					11 . 35 . 59,54	Vesta.
12 . 59 . 34,79	40,03		54,62	11,87	17,25			1 . 0 . 12,37	Polaris SP.
14 . 37 . 33,48			33,58	51,41	17,83			14 . 37 . 51,44	ε Bootis.
14 . 41 . 32,27			32,80	50,56	17,76			14 . 41 . 50,66	α^2 Libræ.
9 . 59 . 19,25			19,52	38,48	18,96		18,47	9 . 59 . 38,64	Regulus.
2 . 52 . 24,50		+ 9,1	31,25			1,51	20,10	2 . 53 . 51,53	☉'s center.
2 . 54 . 37,59									
5 . 15 . 34,41			34,49	54,87	20,38			5 . 15 . 54,92	β Tauri.
6 . 4 . 29,32			29,43					6 . 4 . 49,91	Venus 1 L.
7 . 30 . 21,51			21,83	42,50	20,67			7 . 30 . 42,40	Procyon.
7 . 34 . 55,32			55,39	16,03	20,64			7 . 35 . 15,97	Pollux.
9 . 19 . 10,84			11,28	31,94	20,66			9 . 19 . 31,97	α Hydræ.
9 . 59 . 17,42			17,67	38,47	20,80			9 . 59 . 38,40	Regulus.
11 . 35 . 41,71			41,94					11 . 36 . 2,77	Vesta.
11 . 40 . 21,50			21,72	42,59	20,87			11 . 40 . 42,55	β Leonis.
12 . 59 . 33,38	38,62		52,45	12,70	20,25			1 . 0 . 13,37	Polaris SP.
13 . 16 . 13,80			14,25	35,14	20,89			13 . 16 . 35,18	Spica.
13 . 58 . 20,95			23,05					13 . 58 . 44,03	Saturn's center.
13 . 58 . 24,26									
14 . 7 . 51,68			51,86	12,74	20,88			14 . 8 . 12,85	Arcturus.
15 . 10 . 36,99			37,32					15 . 10 . 58,37	5 Serpentis.
15 . 27 . 25,39			25,49	46,70	21,21			15 . 27 . 46,56	α Cor. Bor.
15 . 36 . 51,80			52,10	13,29	21,19			15 . 37 . 13,18	α Serpentis.
16 . 5 . 25,42			25,67	47,00	21,33			16 . 5 . 46,78	δ Ophiuchi.
16 . 19 . 1,53			2,14	23,50	21,36			16 . 19 . 23,27	Antares.
1 . 0 . 10,37	4,91		51,99	12,87	20,88	1,47	21,56	1 . 0 . 13,61	Polaris.
2 . 56 . 14,86			21,75					2 . 57 . 43,49	☉'s center.
2 . 58 . 28,23									
5 . 6 . 16,40			16,84	38,70	21,86			5 . 6 . 38,71	Rigel.
5 . 45 . 54,79			55,09	17,00	21,91			5 . 46 . 17,00	α Orionis.
6 . 9 . 2,55			2,66					6 . 9 . 24,60	Venus 1 L.
3 . 3 . 57,79		+ 9,7	4,74			1,46	24,75	3 . 5 . 29,68	☉'s center.
3 . 6 . 11,24									

Error of Collimation = − 0″,1.
Level Error = − 2″,69. From May 9. = − 2″,77.
Meridian Error from May 6 by Polaris SP. and Polaris May 6, allowing $0^s,51$ for clock rate and change of Æ.
Meridian Error from May 9 by three consecutive transits of Polaris SP., Polaris, and Polaris SP. on May 9 and 10.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
May 9	α Orionis...... (unsteady)	11,1	24,4	38,1	51,5	5,3	18,7	5 . 46 . 32,1		B.
	Venus 1 L. (cloudy & unsteady)	......	34,0	49,1	4,7	19,6	34,4	6 . 18 . 49,4	− 7,56	B.
	Regulus	31,3	45,2	58,9	12,8	26,9	40,5	9 . 59 . 54,2		B.
	Vesta	13,7	27,4	41,3	55,2	9,4	23,2	11 . 36 . 36,7		B.
	β Leonis	35,1	48,9	3,2	17,1	30,9	44,8	11 . 40 . 58,8		B.
	Polaris SP. ...... (cloudy)	34.53,2	42.57,8	51.14,2	59.30,8	7.42,2	......	13 . 24 . 12,6	+ 2 . 44,46	B.
	Saturn 1 L. } .. (very cloudy)	46,5	......	14,1	......	41,9	......	13 . 58 . 8,4		B.
	Saturn 2 L. }	......	......	......	30,3	......	57,7	13 . 57	− 13,65	B.
	(*a*) Arcturus	4,1	18,4	32,7	46,9	1,7	16,0	14 . 8 . 30,2		B.
	(*b*) Polaris	35.27,8	43.42,4	51.57,6	0. 8,2	8.26,2	16.33,4	1 . 24 . 43,6		B.
May 10	⊙ 1 L. } ... (unsteady and cloudy)	7,2	21,5	35,4	49,8	4,4	18,2	3 . 8 . 32,3		B.
	⊙ 2 L. }	21,1	35,1	49,4	3,6	18,1	31,8	3 . 10 . 45,8		B.
	(*c*) Mercury 1 L.	......	......	53,8	8,2	23,0	37,6	3 . 53 . 51,9	− 14,61	B.
	(*c*) Venus 1 L.	47,7	......	18,0	32,7	47,8	2,9	6 . 23 . 17,9	− 5,04	B.
	Jupiter 1 L.	14,9	......	44,4	......	14,0	......	6 . 55 . 43,0		B.
	Jupiter 2 L.	......	32,5	......	1,7	......	31,1	6 . 55		B.
	Procyon	35,1	48,2	1,8	15,6	29,0	42,3	7 . 30 . 55,9		B.
	Pollux	3,3	18,5	33,8	49,1	4,8	19,7	7 . 35 . 35,1		B.
	α Hydræ	23,6	37,2	50,9	4,8	18,4	31,8	9 . 19 . 45,6		B.
	Regulus	29,9	43,5	57,6	11,4	25,6	39,0	9 . 59 . 52,7		B.
	β Leonis	33,5	47,4	1,9	15,4	29,7	43,3	11 . 40 . 57,3		B.
	(*d*) Polaris SP.	34.52,2	43. 2,4	51. 9,8	59.26,4	7.40,6	......	13 . 24 . 10,8	+ 2 . 44,45	B.
	Spica	26,3	40,1	54,0	7,7	21,6	35,1	13 . 16 . 48,5		B.
	Saturn 1 L.	29,1	......	56,2	......	24,2	......	13 . 57 . 51,1		B.
	Saturn 2 L.	......	45,9	......	13,1	......	40,4	13 . 57		B.
	Arcturus....... (blazing)	2,6	17,1	31,3	46,0	0,2	14,4	14 . 8 . 28,4		B.
May 11	⊙ 1 L. } ..... (faint and hazy)	0,3	14,4	28,8	42,9	57,2	11,3	3 . 12 . 25,2		B.
	⊙ 2 L. }	14,1	28,1	42,3	56,8	11,1	25,1	3 . 14 . 39,0		B.
	Venus 1 L. .... (unsteady)	13,9	28,9	43,9	59,3	14,4	29,3	6 . 27 . 44,1		B.
	Jupiter 1 L. } .. (very faint)	59,1	......	28,2	......	58,0	......	6 . 56 . 27,0		B.
	Jupiter 2 L. }	......	15,9	......	45,3	......	14,7	6 . 56		B.
	Procyon .... (unsteady)	33,2	46,7	0,3	13,9	27,7	41,0	7 . 30 . 54,4		B.
	Pollux .... (unsteady)	1,8	16,9	32,4	47,7	3,2	18,1	7 . 35 . 33,2		B.
	Regulus	28,3	42,2	56,1	9,8	23,8	37,4	9 . 59 . 50,9		B.
	Vesta	30,9	44,8	58,8	12,4	26,6	40,1	11 . 36 . 53,9		B.
	β Leonis	32,1	46,0	0,0	13,9	28,1	41,6	11 . 40 . 56,1		B.
	Polaris SP. (unsteady & blazing)	34.52,8	42.58,8	51. 6,2	59.26,4	7.39,2	......	13 . 24 . 8,6	+ 2 . 44,44	B.
	Spica .... (blazing)	25,1	38,7	52,4	6,2	19,9	33,5	13 . 16 . 47,2		B.
	(*e*) Saturn 1 L.	11,5	......	39,0	......	6,5	......	13 . 57 . 34,3		B.
	Saturn 2 L.	......	28,3	......	55,6	......	23,1	13 . 57		B.
	Arcturus	1,4	15,3	29,6	44,1	58,3	12,7	14 . 8 . 26,8		B.
	(*f*) Polaris	35.22,6	43.38,6	51.54,2	0. 2,4	8.21,2	16.31,4	1 . 24 . 40,8		B.
May 12	(*g*) ⊙ 1 L.	53,2	7,3	21,8	36,2	50,4	4,3	3 . 16 . 18,6		B.
	(*g*) ⊙ 2 L.	7,7	21,9	35,9	50,1	4,4	18,7	3 . 18 . 32,8		B.
	(*g*) Mercury 1 L.	14,8	29,7	44,5	59,2	13,9	28,5	4 . 10 . 43,0		B.
	Rigel	27,6	41,1	54,8	8,5	22,1	35,6	5 . 6 . 49,2		B.
	β Tauri	38,9	54,2	9,6	25,1	40,4	55,5	5 . 16 . 10,9		B.
	α Orionis	5,9	19,3	32,9	46,6	0,3	13,8	5 . 46 . 27,9		B.
	Venus 1 L.	38,3	54,0	8,2	23,9	39,1	53,9	6 . 32 . 8,9		B.
	Jupiter 1 L. } .. (very faint)	42,8	......	12,3	......	41,9	......	6 . 57 . 11,0		B.
	Jupiter 2 L. }	......	0,3	......	29,4	......	58,8	6 . 56		B.
	(*h*) Procyon	31,3	44,8	58,4	12,1	25,4	38,9	7 . 30 . 52,4		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.

(*a*) Difficult to observe: blazing and then faint and cloudy.

(*b*) Wires III. and VII. were marked doubtful on account of clouds.

(*c*) Great motion: wires lost through clouds.

(*d*) Blazing, with much motion.

(*e*) The observer supposed at the time of taking the observation that it was 1^s or 2^s too small: it appeared by comparison with the Tables to be 2^s too small, and is accordingly altered.

(*f*) Faint at times with great motion.

(*g*) Very great motion in these and the four following observations.

(*h*) Much unsteadiness in this and the three following observations.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0ʰ.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
5 . 45 . 51,60		+9,7	51,93	16,99	25,06	1,46	24,75	5 . 46 . 17,03	α Orionis.
6 . 18 . 4,31			4,43					6 . 18 . 29,56	Venus 1 L.
9 . 59 . 12,83			13,10	38,79	25,69			9 . 59 . 38,46	Regulus.
11 . 35 . 55,27			55,53					11 . 36 . 20,99	Vesta.
11 . 40 . 16,97			17,21	42,57	25,36			11 . 40 . 42,67	β Leonis.
12 . 59 . 29,59	34,98		49,72	13,83	24,11			1 . 0 . 15,26	Polaris SP.
13 . 57 . 27,72			29,50					13 . 57 . 55,10	Saturn's center.
13 . 57 . 30,35									
14 . 7 . 47,15			47,34	12,76	25,42			14 . 8 . 12,95	Arcturus.
1 . 0 . 8,46	2,85		49,08	14,04	24,96	1,45	26,16	1 . 0 . 15,30	Polaris.
3 . 7 . 49,83			56,91					3 . 9 . 23,26	⊙'s center.
3 . 10 . 3,56									
3 . 53 . 8,29			8,47					3 . 53 . 34,87	Mercury 1 L.
6 . 22 . 32,79			32,91					6 . 22 . 59,46	Venus 1 L.
6 . 54 . 59,07			0,59					6 . 55 . 27,17	Jupiter's center.
6 . 55 . 1,77									
7 . 30 . 15,41			15,75	42,45	26,70			7 . 30 . 42,36	Procyon.
7 . 34 . 49,19			49,28	15,98	26,70			7 . 35 . 15,90	Pollux.
9 . 19 . 4,61			5,08	31,89	26,81			9 . 19 . 31,80	α Hydræ.
9 . 59 . 11,38			11,65	38,42	26,77			9 . 59 . 38,41	Regulus.
11 . 40 . 15,50			15,74	42,56	26,82			11 . 40 . 42,61	β Leonis.
12 . 59 . 28,15	33,54		48,28	14,28	26,00			1 . 0 . 15,23	Polaris SP.
13 . 16 . 7,62			8,10	35,14	27,04			13 . 16 . 35,06	Spica.
13 . 57 . 10,15			12,11					13 . 57 . 39,12	Saturn's center.
13 . 57 . 13,13									
14 . 7 . 45,72			45,91	12,76	26,85			14 . 8 . 12,92	Arcturus.
3 . 11 . 42,87		+9,3	49,95			1,70	27,63	3 . 13 . 17,81	⊙'s center.
3 . 13 . 56,64									
6 . 26 . 59,12			59,23					6 . 27 . 27,32	Venus 1 L.
6 . 55 . 43,07			44,33					6 . 56 . 12,45	Jupiter's center.
6 . 55 . 45,30									
7 . 30 . 13,89			14,21	42,44	28,23			7 . 30 . 42,38	Procyon.
7 . 34 . 47,62			47,70	15,97	28,27			7 . 35 . 15,87	Pollux.
9 . 59 . 9,79			10,04	38,41	28,37			9 . 59 . 38,38	Regulus.
11 . 36 . 12,50			12,74					11 . 36 . 41,19	Vesta.
11 . 40 . 13,97			14,19	42,55	28,36			11 . 40 . 42,65	β Leonis.
12 . 59 . 26,44	31,83		45,97	14,77	28,80			1 . 0 . 14,52	Polaris SP.
13 . 16 . 6,16			6,62	35,14	28,52			13 . 16 . 35,19	Spica.
13 . 56 . 52,82			54,69					13 . 57 . 23,31	Saturn's center.
13 . 56 . 55,67									
14 . 7 . 44,03			44,20	12,76	28,56			14 . 8 . 12,83	Arcturus.
1 . 0 . 4,46	58,85		45,64	15,03	29,39	1,89	29,46	1 . 0 . 15,18	Polaris.
3 . 15 . 35,97			43,29					3 . 17 . 13,01	⊙'s center.
3 . 17 . 50,21									
4 . 9 . 59,09			59,24					4 . 10 . 29,03	Mercury 1 L.
5 . 6 . 8,42			8,87	38,69	29,82			5 . 6 . 38,73	Rigel.
5 . 15 . 24,94			25,03	54,86	29,83			5 . 15 . 54,91	β Tauri.
5 . 45 . 46,67			46,98	16,98	30,00			5 . 46 . 16,90	α Orionis.
6 . 31 . 23,75			23,86					6 . 31 . 53,83	Venus 1 L.
6 . 56 . 27,00			28,40					6 . 56 . 58,40	Jupiter's center.
6 . 56 . 29,50									
7 . 30 . 11,90			12,22	42,43	30,21			7 . 30 . 42,27	Procyon.

Error of Collimation = – 0″,1.

Level Error = – 2″,77.

The five observations of Polaris from May 11. 10ʰ. to May 13. 10ʰ. furnish three sets each of three consecutive passages, the first of which gives for Meridian Error 9″,30, the second 9″,30, and the third 9″,35. 9″,3 is adopted for the whole.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
May 12	Pollux	59,7	14,9	30,3	45,7	1,3	16,5	7 . 35 . 32,0		B.
	Regulus	26,4	40,2	54,1	8,1	21,8	35,6	9 . 59 . 49,2		B.
	Vesta	41,9	55,7	9,6	23,1	37,2	50,9	11 . 37 . 4,9		B.
	β Leonis	29,9	43,9	57,9	12,1	26,2	39,8	11 . 40 . 53,7		B.
	Polaris SP........ (flaring)	34.49,2	43. 0,8	51. 6,6	59.25,2	7.37,4	......	13 . 24 . 8,8	+ 2 . 44,44	B.
	Spica .... (flaring)	23,1	36,7	51,0	4,5	18,0	31,6	13 . 16 . 45,1		B.
	Saturn 1 L.} ... (unsteady)	53,9	......	21,4	......	48,8	......	13 . 57 . 16,0		B.
	Saturn 2 L.}	......	11,0	......	37,9	......	5,8	13 . 57		B.
	Arcturus	59,0	13,3	27,7	42,1	56,5	11,1	14 . 8 . 25,0		B.
	Polaris .... (dancing)	35.20,8	43.35,4	51.50,6	0. 5,4	8.22,6	16.28,2	1 . 24 . 41,2		B.
May 13	⊙ 1 L.} ...... (great motion)	46,9	1,3	15,2	29,9	44,2	58,3	3 . 20 . 12,6		B.
	⊙ 2 L.}	1,5	15,8	30,1	44,2	58,4	13,0	3 . 22 . 27,1		B.
	Mercury 1 L. .. (unsteady)	31,1	45,9	0,6	15,4	30,3	44,8	4 . 18 . 59,4		B.
	Rigel	25,7	39,2	53,1	6,6	20,3	33,7	5 . 6 . 47,1		B.
	β Tauri	37,1	52,3	7,7	23,1	38,7	53,9	5 . 16 . 9,1		B.
	α Orionis	4,2	17,7	31,1	44,8	58,2	11,9	5 . 46 . 25,7		B.
	Venus 1 L. .... (unsteady)	0,1	15,8	31,1	46,0	1,2	16,1	6 . 36 . 30,9		B.
	Procyon	29,4	42,9	56,7	10,2	23,9	37,2	7 . 30 . 50,8		B.
	Pollux	58,1	13,3	28,8	44,1	59,4	14,4	7 . 35 . 29,9		B.
	α Hydræ	18,7	32,1	45,6	59,4	13,3	26,8	9 . 19 . 40,2		B.
	Regulus	24,4	38,4	52,1	5,8	19,7	33,6	9 . 59 . 47,1		B.
	Vesta .... (unsteady)	54,1	8,0	22,1	35,6	49,9	3,5	11 . 37 . 17,1		B.
	β Leonis	28,1	42,2	55,9	10,1	24,4	38,1	11 . 40 . 51,9		B.
	Polaris SP. ...... (flaring)	34.47,6	42 58,2	51. 7,4	59.26,6	7.37,2	15.51,6	13 . 24 . 7,2		B.
	Saturn 1 L.	36,8	......	3,8	......	31,3	......	13 . 56 . 58.5		B.
	Saturn 2 L.	......	53,2	......	20,7	......	48,2	13 . 56		B.
	Polaris ..... (great motion)	35.18,2	43.33,6	51.49,4	59.59,8	8.20,4	16.26,6	1 . 24 . 36,2		B.
May 14	(a) ⊙ 1 L.} ...... (great vibration)	40,9	55,3	9,9	23,7	38,0	52,3	3 . 24 . 6,7		B.
	⊙ 2 L.}	55,8	10,1	24,2	38,3	52,6	6,7	3 . 26 . 21,2		B.
	Mercury 1 L.	39,7	55,1	9,6	24,2	39,1	53,6	4 . 27 . 8,5		B.
	Rigel	24,2	37,6	51,1	4,6	18,8	32,1	5 . 6 . 45,6		B.
	β Tauri	35,2	50,5	5,8	21,2	36,8	52,1	5 . 16 . 7,1		B.
	(a) Venus 1 L.	21,3	36,2	51,3	6,8	22,1	36,7	6 . 40 . 51,9		B.
	Jupiter 1 L.	11,9	......	40,9	......	10,4	......	6 . 58 . 39,3		B.
	Jupiter 2 L.	......	28,8	......	58,1	......	27,2	6 . 58		B.
	(a) Procyon	27,6	41,2	54,9	8,4	22,2	35,3	7 . 30 . 48,9		B.
	(a) Pollux	55,8	11,7	27,0	42,1	57,7	12,7	7 . 35 . 28,1		B.
	α Hydræ	16,6	30,5	43,9	57,5	11,3	24,8	9 . 19 . 38,4		B.
	Regulus	22,6	36,8	50,5	4,2	18,1	32,2	9 . 59 . 45,6		B.
	Vesta	13,4	27,1	41,1	54,9	9,0	23,0	11 . 37 . 36,7		B.
	β Leonis	......	......	54,3	8,4	22,7	36,7	11 . 40 . 50,2	– 14,00	B.
	(a) Polaris SP.	34.46,4	42.54,8	51. 5,6	59.24,2	7.43,4	15.52,8	13 . 24 . 9,6		B.
	Saturn 1 L.	19,5	......	47,0	......	14,7	......	13 . 56 . 41,7		B.
	Saturn 2 L.	......	36,2	......	3,9	......	30,9	13 . 56		B.
	Arcturus	55,1	9,7	24,2	38,4	52,9	7,2	14 . 8 . 21,3		B.
	(a) Polaris	35.14,6	43.33,2	51.49,4	59.59,8	8.18,6	16.25,2	1 . 24 . 40,4		B.
May 15	Polaris SP...... (very steady)	34.45,2	42.56,6	51. 4,8	59.22,4	7.35,2	15.48,6	13 . 24 . 4,2		B.
	(a) Polaris	35.14,2	43.34,6	51.45,2	59.57,8	8.17,4	16.22,2	1 . 24 . 33,6		B.
May 16	⊙ 1 L.} ..... (very unsteady)	31,2	45,7	0,1	14,5	28,8	43,0	3 . 31 . 57,2		B.
	⊙ 2 L.}	45,9	0,3	14,7	29,1	43,6	57,9	3 . 34 . 12,1		B.
	Mercury 1 L. (great motion)	31,5	46,9	1,3	16,4	31,0	45,9	4 . 43 . 0,5		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, May 13. 2^{h}.; and May 16. 1^{h}.

(*a*) Much unsteadiness in all these observations.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
7 . 34 . 45,77		+ 9,3	45,85	15,96	30,11	1,89	29,46	7 . 35 . 15,91	Pollux.
9 . 59 . 7,92			8,17	38,40	30,23			9 . 59 . 38,42	Regulus.
11 . 36 . 23,33			23,58					11 . 36 . 53,95	Vesta.
11 . 40 . 11,93			12,14	42,54	30,40			11 . 40 . 42,52	β Leonis.
12 . 59 . 25,77	31,16		45,30	15,30	30,00			1 . 0 . 15,78	Polaris SP.
13 . 16 . 4,29			4,75	35,14	30,39			13 . 16 . 35,25	Spica.
13 . 56 . 35,02			37,07					13 . 57 . 7,63	Saturn's center.
13 . 56 . 38,23									
14 . 7 . 42,10			42,27	12,76	30,49			14 . 8 . 12,89	Arcturus.
1 . 0 . 3,46	58,18		44,97	15,59	30,62	1,81	31,34	1 . 0 . 16,39	Polaris.
3 . 19 . 29,78			37,25					3 . 21 . 8,84	⊙'s center.
3 . 21 . 44,30									
4 . 18 . 15,36			15,52					4 . 18 . 47,18	Mercury 1 L.
5 . 6 . 6,53			6,98	38,69	31,71			5 . 6 . 38,71	Rigel.
5 . 15 . 23,13			23,23	54,86	31,63			5 . 15 . 54,97	β Tauri.
5 . 45 . 44,80			45,12	16,98	31,86			5 . 46 . 16,90	α Orionis.
6 . 35 . 45,89			46,02					6 . 36 . 17,86	Venus 1 L.
7 . 30 . 10,15			10,48	42,43	31,95			7 . 30 . 42,39	Procyon.
7 . 34 . 44,00			44,09	15,95	31,86			7 . 35 . 16,00	Pollux.
9 . 18 . 59,45			59,90	31,85	31,95			9 . 19 . 31,94	α Hydræ.
9 . 59 . 5,87			6,13	38,39	32,26			9 . 59 . 38,22	Regulus.
11 . 36 . 35,76			36,02					11 . 37 . 8,24	Vesta.
11 . 40 . 10,10			10,33	42,53	32,20			11 . 40 . 42,55	β Leonis.
12 . 59 . 25,11	30,19		44,33	15,88	31,55			1 . 0 . 16,65	Polaris SP.
13 . 56 . 17,60			19,60					13 . 56 . 51,99	Saturn's center.
13 . 56 . 20,70									
1 . 0 . 0,60	55,32	+ 8,7	42,97	16,20	33,23	1,80	33,12	1 . 0 . 16,17	Polaris.
3 . 23 . 23,83			31,30					3 . 25 . 4,68	⊙'s center.
3 . 25 . 38,42									
4 . 26 . 24,25			24,37					4 . 26 . 57,82	Mercury 1 L.
5 . 6 . 4,86			5,27	38,69	33,42			5 . 6 . 38,77	Rigel.
5 . 15 . 21,24			21,32	54,86	33,54			5 . 15 . 54,84	β Tauri.
6 . 40 . 6,62			6,73					6 . 40 . 40,35	Venus 1 L.
6 . 57 . 55,62			56,96					6 . 58 . 30,61	Jupiter's center.
6 . 57 . 58,03									
7 . 30 . 8,36			8,66	42,42	33,76			7 . 30 . 42,34	Procyon.
7 . 34 . 42,15			42,22	15,94	33,72			7 . 35 . 15,91	Pollux.
9 . 18 . 57,57			57,98	31,84	33,86			9 . 19 . 31,80	α Hydræ.
9 . 59 . 4,29			4,52	38,38	33,86			9 . 59 . 38,39	Regulus.
11 . 36 . 55,03			55,26					11 . 37 . 29,25	Vesta.
11 . 40 . 8,46			8,67	42,52	33,85			11 . 40 . 42,67	β Leonis.
12 . 59 . 25,26	30,34		43,56	16,51	32,95			1 . 0 . 17,66	Polaris SP.
13 . 56 . 0,72			2,60					13 . 56 . 36,77	Saturn's center.
13 . 56 . 3,67									
14 . 7 . 38,40			38,56	12,76	34,20			14 . 8 . 12,74	Arcturus.
1 . 0 . 0,17	54,89		42,54	16,84	34,30		34,92	1 . 0 . 17,54	Polaris.
12 . 59 . 22,43	27,51		40,73	17,14	36,41			1 . 0 . 16,62	Polaris SP.
0 . 59 . 57,86	52,58		40,23	17,47	37,24		36,73	1 . 0 . 17,04	Polaris.
3 . 31 . 14,36			21,88					3 . 32 . 58,88	⊙'s center.
3 . 33 . 29,09									
4 . 42 . 16,22			16,32					4 . 42 . 53,40	Mercury 1 L.

Error of Collimation = − 0″,1.

Level Error from Polaris May 12. = − 2″,60. From May 16. = − 2″,90.

Meridian Error by three sets of three consecutive transits of Polaris beginning with Polaris May 13. The first set gives 8″,4, the second 8″,8, the third 8″,9. The mean 8″,7 is used for the whole.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
May 16	α Orionis (faint, unsteady)	58,6	12,2	25,9	39,7	53,5	6,9	5 . 46 . 20,2		B.
	Venus 1 L.	55,2	10,3	25,6	40,4	55,8	10,7	6 . 49 . 25,9		B.
	Procyon	23,9	38,0	51,2	4,8	18,7	32,0	7 . 30 . 45,3		B.
	Pollux	52,7	8,2	23,3	38,8	53,9	9,1	7 . 35 . 24,5		B.
	α Hydræ	13,1	26,7	40,6	54,0	7,7	21,1	9 . 19 . 34,7		B.
	Regulus	19,0	32,9	46,7	0,7	14,7	28,2	9 . 59 . 42.0		B.
	Saturn 1 L.	......	......	13,9	......	41,1	......	13 . 56 . 8,0	– 13,66	B.
	Saturn 2 L.	......	3,4	......	30,1	......	57,6	13 . 55		B.
	Arcturus	51,9	6,0	20,4	34,8	49,2	3,5	14 . 8 . 17,4		B.
	Polaris	35.13,8	43.31,6	51.47,2	59.58,4	8.17,2	16.23,8	1 . 24 . 37,6		B.
May 17	⊙ 1 L.	27,2	41,8	56,1	10,3	24,8	38,9	3 . 35 . 53,1		B.
	⊙ 2 L.	42,1	56,6	11,1	25,3	39,9	53,9	3 . 38 . 8,1		B.
	Mercury 1 L.	12,4	27,5	42,3	57,1	12,3	27,0	4 . 50 . 41,7		B.
	Venus 1 L.	8,9	23,7	39,0	53,9	9,2	24,0	6 . 53 . 39,0		B.
	Jupiter 1 L.	27,3	......	56,9	......	26,3	......	7 . 0 . 55,2		B.
	Jupiter 2 L.	......	44,5	......	13,9	......	43,4	7 . 0		B.
	Polaris SP.	34.45,4	42.55,2	51. 1,4	59.20,8	7.34,2	15.47,4	13 . 24 . 3,8		B.
	Saturn 1 L.	29,3	......	56,7	......	24,9	......	13 . 55 . 51,6		B.
	Saturn 2 L.	......	46,5	......	13,8	......	41,1	13 . 55		B.
	Arcturus	49,7	4,3	18,8	33,1	47,4	1,7	14 . 8 . 15,8		B.
	ε Bootis	26,1	41,3	56,5	11,7	27,1	42,3	14 . 37 . 57,3		B.
	α^2 Libræ	28,6	42,5	56,8	10,9	25,3	38,6	14 . 41 . 52,4		B.
	Polaris	......	43.31,4	51.46,8	59.55,2	8.16,6	16.21,8	1 . 24 . 35,4	– 4 . 6,96	B.
May 18	(*a*) ⊙ 1 L.	23,7	37,9	52,4	6,9	21,3	35,2	3 . 39 . 49,3		B.
	⊙ 2 L.	38,6	53,0	7,6	21,8	36,2	50,4	3 . 42 . 5,1		B.
	(*a*) Mercury 1 L.	42,4	56,9	13,0	27,2	42,6	57,3	4 . 58 . 12,0		B.
	(*a*) Rigel	17,0	30,4	44,1	57,3	11,2	24,9	5 . 6 . 38,2		B.
	(*a*) Orionis	54,9	8,7	22,3	36,1	49,5	3,2	5 . 46 . 16,8		B.
	☽ 1 L. (very faint)	15,3	30,8	46,2	1,9	17,3	32,7	6 . 0 . 48,1		B.
	Venus 1 L. (great motion)	19,9	35,2	50,2	5,3	20,5	35,3	6 . 57 . 49,9		B.
	Jupiter 1 L. } (very faint)	13,3	......	42,8	......	12,2	......	7 . 1 . 41,2		B.
	Jupiter 2 L. }	......	30,9	......	0,1	......	29,4	7 . 1		B.
	Procyon	20,4	34,1	47,6	1,2	14,7	28,1	7 . 30 . 41,4		B.
	Pollux	48,7	4,3	19,5	34,8	50,4	5,5	7 . 35 . 20,9		B.
	Regulus	15,4	29,3	42,9	56,7	11,1	24,5	9 . 59 . 38,3		B.
	Vesta (faint)	21,4	35,1	48,8	2,9	16,7	30,6	11 . 38 . 44,4		B.
	(*b*) β Leonis	......	......	......	......	15,1	29,0	11 . 40 . 42,7	– 27,99	B.
	Polaris SP. (flaring)	34.45,6	42.54,2	50.58,8	59.17,6	7.36,2	15.42,4	13 . 24 . 6,8		B.
	Saturn 1 L.	13,5	......	40,7	......	8,1	......	13 . 55 . 35,1		B.
	Saturn 2 L.	......	30,0	......	57,6	......	25,1	13 . 55		B.
	Arcturus (very cloudy)	48,1	......	16,9	31,1	45,9	......	14 . 7	+ 10,73	B.
May 19	⊙ 1 L. } (great undulation)	21,1	35,4	49,7	4,2	18,7	32,8	3 . 43 . 47,1		B.
	⊙ 2 L. }	36,3	50,8	5,1	19,4	33,9	48,1	3 . 46 . 2,8		B.
	Mercury 1 L. (hazy)	0,7	16,1	31,0	45,8	1,1	15,9	5 . 5 . 30,5		B.
	β Tauri (hazy, unsteady)	26,1	41,7	57,1	12,4	27,7	43,0	5 . 15 . 58,1		B.
	☽ 1 L. (hazy, faint)	8,9	24,3	39,9	55,3	11,1	26,4	6 . 55 . 41,8		B.
	Jupiter 1 L. } (very faint)	59,8	......	29,1	......	58,8	......	7 . 2 . 27,7		B.
	Jupiter 2 L. }	......	17,3	......	46,9	......	16,1	7 . 2		B.
	Procyon	18,5	32,1	45,9	59,3	13,1	26,4	7 . 30 . 40,0		B.
	Pollux (unsteady)	47,1	2,7	18,1	33,1	48,7	4,0	7 . 35 . 19,0		B.
	Regulus	13,9	27,6	41,4	55,2	9,3	23,1	9 . 59 . 36,5		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.

(*a*) Very great motion in these mid-day observations.

(*b*) Hurried observation.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
5 . 45 . 39,58		+ 8,7	39,85	16,97	37,12	1,80	36,73	5 . 46 . 17,02	α Orionis.
6 . 48 . 40,55			40,64					6 . 49 . 17,88	Venus 1 L.
7 . 30 . 4,84			5,13	42,40	37,27			7 . 30 . 42,42	Procyon.
7 . 34 . 38,65			38,70	15,92	37,22			7 . 35 . 16,00	Pollux.
9 . 18 . 53,99			54,39	31,82	37,43			9 . 19 . 31,82	α Hydræ.
9 . 59 . 0,60			0,82	38,35	37,53			9 . 59 . 38,30	Regulus.
13 . 55 . 27,34			29,25					13 . 56 . 7,03	Saturn's center.
13 . 55 . 30,37									
14 . 7 . 34,74			34,89	12,76	37,87			14 . 8 . 12,68	Arcturus.
0 . 59 . 58,51	52,64	+ 8,6	40,43	18,12	37,69	1,85	38,47	1 . 0 . 18,98	Polaris.
3 . 35 . 10,31			17,96					3 . 36 . 56,71	☉'s center.
3 . 37 . 25,29									
4 . 49 . 57,19			57,28					4 . 50 . 36,12	Mercury 1 L.
6 . 52 . 53,95			54,03					6 . 53 . 33,03	Venus 1 L.
7 . 0 . 11,42			12,79					7 . 0 . 51,80	Jupiter's center.
7 . 0 . 13,93									
12 . 59 . 21,17	26,80		39,87	18,44	38,57			1 . 0 . 19,35	Polaris SP.
13 . 55 . 10,62			12,61					13 . 55 . 52,15	Saturn's center.
13 . 55 . 13,80									
14 . 7 . 32,97			33,12	12,76	39,64			14 . 8 . 12,68	Arcturus.
14 . 37 . 11,75			11,81	51,47	39,66			14 . 37 . 51,41	ε Bootis.
14 . 41 . 10,72			11,19	50,65	39,46			14 . 41 . 50,79	α² Libræ.
0 . 59 . 57,57	51,70		39,49	18,75	39,26	1,76	40,39	1 . 0 . 19,95	Polaris.
3 . 39 . 6,67			14,39					3 . 40 . 55,05	☉'s center.
3 . 41 . 21,81									
4 . 57 . 27,35			27,44					4 . 58 . 8,20	Mercury 1 L.
5 . 5 . 57,59			57,99	38,69	40,70			5 . 6 . 38,75	Rigel.
5 . 45 . 35,93			36,20	16,97	40,77			5 . 46 . 17,02	α Orionis.
6 . 0 . 1,75			1,84					6 . 0 . 42,67	☽ 1 L.
6 . 57 . 5,19			5,28					6 . 57 . 46,18	Venus 1 L.
7 . 0 . 57,37			58,87					7 . 1 . 39,77	Jupiter's center.
7 . 1 . 0,13									
7 . 30 . 1,07			1,36	42,39	41,03			7 . 30 . 42,30	Procyon.
7 . 34 . 34,87			34,92	15,90	40,98			7 . 35 . 15,87	Pollux.
9 . 58 . 56,89			57,11	38,33	41,22			9 . 59 . 38,23	Regulus.
11 . 38 . 2,84			3,06					11 . 38 . 44,30	Vesta.
11 . 40 . 0,94			1,14	42,49	41,35			11 . 40 . 42,39	β Leonis.
12 . 59 . 20,23	25,86		38,93	19,05	40,12			1 . 0 . 20,27	Polaris SP.
13 . 54 . 54,35			56,36					13 . 55 . 37,77	Saturn's center.
13 . 54 . 57,57									
14 . 7 . 31,23			31,38	12,76	41,38			14 . 8 . 12,81	Arcturus.
3 . 43 . 4,14		+ 9,0	11,97			1,59	42,15	3 . 44 . 54,37	☉'s center.
3 . 45 . 19,49									
5 . 4 . 45,87			45,98					5 . 5 . 28,47	Mercury 1 L.
5 . 15 . 12,30			12,37	54,87	42,50			5 . 15 . 54,87	β Tauri.
6 . 54 . 55,39			55,47					6 . 55 . 38,08	☽ 1 L.
7 . 1 . 43,85			45,44					7 . 2 . 28,06	Jupiter's center.
7 . 1 . 46,77									
7 . 29 . 59,33			59,63	42,38	42,75			7 . 30 . 42,28	Procyon.
7 . 34 . 33,24			33,30	15,89	42,59			7 . 35 . 15,95	Pollux.
9 . 58 . 55,29			55,53	38,32	42,79			9 . 59 . 38,34	Regulus.

Error of Collimation = − 0″,1.
Level Error = − 2″,90.
Meridian Error from Polaris May 16 by two sets of three consecutive transits of Polaris beginning with Polaris May 16. The Meridian Error by Polaris SP., Polaris, and Polaris SP. May 19 and 20 is 9″,2; and by Spica and Polaris SP. May 19. 8″,7. The mean 9″,0 is used from May 19, being probably more correct than either determination.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
May 19	Vesta .... (very faint)	43,7	57,7	11,4	25,2	38,9	53,0	11 . 39 . 6,6		B.
	Polaris SP. ...... (flaring)	34.40,2	42.52,6	50.58,4	59.17,8	7.28,4	......	13 . 24 . 3,2	+ 2 . 44,40	B.
	Spica	10,7	24,1	38,1	51,6	5,6	19,1	13 . 16 . 32,7		B.
	Saturn 1 L.	57,1	......	24,4	......	52,1	......	13 . 55 . 19,1		B.
	Saturn 2 L.	......	13,8	......	41,3	......	8,7	13 . 55		B.
	Arcturus......... (blazing)	46,5	1,1	15,4	29,9	44,3	58,2	14 . 8 . 12,6		B.
	ϵ Bootis	22,6	37,7	53,0	8,2	23,6	38,7	14 . 37 . 53,8		C.
	β Ursæ Minoris	......	57,0	47,7	39,6	31,2	22,0	14 . 53 . 13,3	− 25,77	C.
	α Persei SP.	51,6	11,8	32,4	53,0	14,1	34,4	15 . 12 . 55,3		C.
	α Coronæ Borealis. ...	18,0	33,2	48,4	3,5	18,7	33,5	15 . 27 . 48,8		C.
	α Serpentis	49,2	2,6	16,2	30,0	43,8	57,3	15 . 36 . 10,6		C.
	θ Draconis	51,3	17,6	44,0	9,7	36,3	2,4	15 . 59 . 27,8		C.
	δ Ophiuchi	23,2	36,5	50,2	3,8	17,2	30,6	16 . 5 . 44,0		C.
	⁎ N.P.D. 89° . 30′. ...	9,4	23,0	36,5	50,0	3,2	16,8	17 . 4 . 30,0		C.
	Polaris	......	43.29,4	51.40,8	59.55,2	8.15,6	16.17,8	1 . 24 . 34,2	− 4 . 6,95	B.
May 20	⊙ 1 L. ...... (great motion)	18,7	32,9	47,6	2,1	16,7	30,9	3 . 47 . 45,2		B.
	⊙ 1 L.	33,9	48,6	3,1	17,5	32,1	46,4	3 . 50 . 0,8		B.
	Mercury 1 L. (hazy and faint)	7,5	22,4	37,1	52,4	7,4	22,2	5 . 12 . 37,1		B.
	α Orionis....... (unsteady)	52,1	5,6	19,1	32,5	46,2	59,6	5 . 46 . 13,2		B.
	Jupiter 1 L. (hazy & very faint)	46,8	......	16,1	......	45,7	......	7 . 3 . 14,6		B.
	Jupiter 2 L.	......	4,1	......	33,2	......	2,8	7 . 3		B.
	Venus 1 L.	34,8	49,9	4,8	19,7	35,1	49,8	7 . 6 . 4,7		B.
	Procyon	17,2	30,8	44,4	57,9	11,7	25,0	7 . 30 . 38,3		B.
	Pollux	45,5	0,9	16,4	31,8	47,1	2,3	7 . 35 . 17,5		B.
	☾ 1 L. .... (hazy)	43,1	58,4	13,8	29,1	44,7	59,4	7 . 50 . 15,0		B.
	(*a*) Polaris SP. .... (very cloudy)	......	42.52,2	50.54,6	59.16,4	7.27,2	15.41,6	13	+ 1,10	B.
	(*b*) Arcturus	44,7	58,8	14,1	28,2	42,5	56,7	14 . 8 . 11,3		B.
May 21	(*c*) ⊙ 1 L.	17,1	31,2	45,6	0,6	14,9	29,1	3 . 51 . 43,6		B.
	⊙ 2 L.	32,3	47,0	1,7	16,0	30,4	44,9	3 . 53 . 59,1		B.
	Jupiter 1 L. ... (very faint)	33,7	......	3,1	......	32,7	......	7 . 4 . 1,7		B.
	Jupiter 2 L.	......	50,8	......	20,2	......	49,2	7 . 3		B.
	Venus 1 L.	38,1	52,8	8,0	23,0	38.0	52,8	7 . 10 . 7,8		B.
	Regulus	10,5	24,3	38,2	52,0	6,0	19,6	9 . 59 . 33,4		B.
	Vesta .... (very faint)	33,6	47,1	0,5	14,6	28,2	42,0	11 . 39 . 55,7		B.
	Polaris SP. .... (flaring)	34.39,2	42.47,4	50.56,8	59.19,4	7.27,2	......	13 . 23 . 57,6	+ 2 . 44,39	B.
	Spica .... (blazing)	7,4	21,1	35,0	48,4	2,2	16,1	13 . 16 . 29,4		B.
	Saturn 1 L.	26,4	......	53,9	......	21,1	......	13 . 54 . 48,0		B.
	Saturn 2 L.	......	42,7	......	10,6	......	37,6	13 . 54		B.
	Arcturus....... (blazing)	42,9	58,0	11,9	26,4	40,7	55,1	14 . 8 . 9,3		B.
May 22	Procyon	13,4	27,3	41,1	54,5	8,2	21,9	7 . 30 . 35,2		B.
	Pollux	42,3	57,9	13,1	28,4	43,7	59,1	7 . 35 . 14,3		B.
	α Hydræ	3,2	16,6	30,3	44,1	57,6	11,2	9 . 19 . 24,5		B.
	☽ 1 L. .... (uneven)	49,1	3,8	18,8	33,1	48,1	2,8	9 . 35 . 16,9		B.
	Regulus	8,9	22,9	36,8	50,5	4,7	18,2	9 . 59 . 31,8		B.
	γ Leonis	24,8	39,2	53,6	7,9	22,5	36,8	10 . 10 . 51,1		B.
May 24	(*d*) Regulus...... (very cloudy)	6,2	20,1	33,8	47,7	1,8	......	9 . 59	+ 13,80	B.
May 25	⊙ 1 L. . (cloudy and unsteady)	16,9	31,1	45,3	59,9	14,5	29,1	4 . 7 . 43,6		B.
	Pollux .... (clouds)	38,3	53,8	9,2	24,3	......	......	7 . 34	+ 23,00	B.
	Regulus	5,0	18,7	32,7	46,4	0,4	14,1	9 . 59 . 27,6		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, May 24. 1^h.

(*a*) This observation not altogether satisfactory.

(*b*) The intervals not good: the three first wires doubtful on account of clouds.

(*c*) Jagged like a circular saw.

(*d*) Not used for clock-error.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
11 . 38 . 25,21		+ 9,0	25,45			1,59	42,15	11 . 39 . 8,37	Vesta.
12 . 59 . 17,83	23,46		37,14	19,63	42,49			1 . 0 . 20,15	Polaris SP.
13 . 15 . 51,70	51,60		52,14	35,12	42,98			13 . 16 . 35,17	Spica.
13 . 54 . 38,17			40,14					13 . 55 . 23,21	Saturn's center.
13 . 54 . 41,27									
14 . 7 . 29,72			29,88	12,76	42,88			14 . 8 . 12,96	Arcturus.
14 . 37 . 8,23			8,30	51,48	43,18			14 . 37 . 51,42	ϵ Bootis.
14 . 50 . 39,36			39,53					14 . 51 . 22,66	β Ursæ Minoris.
15 . 11 . 53,23			54,07	37,21	43,14			15 . 12 . 37,23	α Persei SP.
15 . 27 . 3,44			3,52	46,81	43,29			15 . 27 . 46,69	α Coronæ Bor.
15 . 35 . 29,95			30,23	13,42	43,19			15 . 36 . 13,42	α Serpentis.
15 . 58 . 9,87			9,35					15 . 58 . 52,56	θ Draconis.
16 . 5 . 3,64			3,88	47,19	43,31			16 . 5 . 47,09	δ Ophiuchi.
17 . 3 . 49,84			50,19					17 . 4 . 33,48	✳ N.P.D. 89°. 30′.
0 . 59 . 55,22	49,35		36,57	19,92	43,35	1,61	43,67	1 . 0 . 20,31	Polaris.
3 . 47 . 2,01			9,91					3 . 48 . 53,83	⊙'s center.
3 . 49 , 17,49									
5 . 11 . 52,30			52,41					5 . 12 . 36,42	Mercury 1 L.
5 . 45 . 32,61			32,89	16,97	44,08			5 . 46 . 16,94	α Orionis.
7 . 2 . 30,80			32,21					7 . 3 . 16,35	Jupiter's center.
7 . 2 . 33,37									
7 . 5 . 19,83			19,93					7 . 6 . 4,07	Venus 1 L.
7 . 29 . 57,90			58,20	42,37	44,17			7 . 30 . 42,37	Procyon.
7 . 34 . 31,64			31,70	15,88	44,18			7 . 35 . 15,88	Pollux.
7 . 49 . 29,07			29,18					7 . 50 . 13,37	☽ 1 L.
12 . 59 . 15,50	21,13		34,81	20,20	45,39			1 . 0 . 19,35	Polaris SP.
14 . 7 . 28,05			28,21	12,76	44,55			14 . 8 . 12,83	Arcturus.
3 . 51 . 0,30		+ 8,7	8,26			1,62	45,34	3 . 52 . 53,86	⊙'s center.
3 . 53 . 15,92									
7 . 3 . 17,80			19,05					7 . 4 . 4,87	Jupiter's center.
7 . 3 . 20,07									
7 . 9 . 22,93			23,02					7 . 10 . 8,85	Venus 1 L.
9 . 58 . 52,00			52,22	38,30	46,08			9 . 59 . 38,23	Regulus.
11 . 39 . 14,53			14,75					11 . 40 . 0,88	Vesta.
12 . 59 . 15,66	21,29		34,51	20,72	46,21			1 . 0 . 20,73	Polaris SP.
13 . 15 . 48,52	48,42		48,94	35,12	46,18			13 . 16 . 35,18	Spica.
13 . 54 . 7,35			9,22					13 . 54 . 55,50	Saturn's center.
13 . 54 . 10,30									
14 . 7 . 26,33			26,48	12,76	46,28			14 . 8 . 12,77	Arcturus.
7 . 29 . 54,51			54,80	42,36	47,56	1,51	46,94	7 . 30 . 42,21	Procyon.
7 . 34 . 28,40			28,45	15,87	47,42			7 . 35 . 15,86	Pollux.
9 . 18 . 43,93			44,33	31,75	47,42			9 . 19 . 31,85	α Hydræ.
9 . 34 . 33,23			33,39					9 . 35 . 20,93	☽ 1 L.
9 . 58 . 50,54			50,76	38,29	47,53			9 . 59 . 38,33	Regulus.
10 . 10 . 7,99			8,12					10 . 10 . 55,70	γ Leonis.
9 . 58 . 47,72		+ 6,7	47,78	38,27	50,49	1,41	49,74	9 . 59 . 38,12	Regulus.
4 . 7 . 0,06			0,05				51,15	4 . 7 . 51,44	⊙ 1 L.
7 . 34 . 24,40			24,31	15,85	51,54			7 . 35 . 15,91	Pollux.
9 . 58 . 46,42			46,48	38,25	51,77			9 . 59 . 38,22	Regulus.

Error of Collimation = − 0″,1.

Level Error = − 2″,90. From May 24. = − 4″,07.

Meridian Error from May 21 by transits of Polaris SP. and Spica on May 21. From May 24 by transits of Polaris SP. and Spica on May 26 and 27, which give respectively 6″,6 and 6″,7.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
May 26	⊙ 1 L.	17,8	32,2	46,7	1,4	16,1	30,3	4 . 11 . 44,2		B.
	⊙ 2 L.	33,9	48,4	3,2	17,5	32,2	46,2	4 . 14 . 1,1		B.
	Rigel (unsteady)	5,1	18,3	32,1	45,6	59,3	13,1	5 . 6 . 26,4		B.
	α Orionis (unsteady)	43,1	56,8	10,3	23,9	37,7	51,1	5 . 46 . 4,7		B.
	Mercury 1 L. (faint)	59,9	15,1	29,9	45,0	0,2	14,9	5 . 50 . 29,9		B.
	Jupiter 1 L. (very faint)	34.6	......	4,2	......	33,4	......	7 . 8 . 2,4		B.
	Jupiter 2 L.	......	52,1	......	21,1	......	50,2	7 . 7		B.
	(*a*) Venus 1 L.	......	......	41,4	56,2	10,9	25,3	7 . 29 . 40,1	– 14,89	B.
	Pollux	37,1	52,1	7,5	22,9	38,7	53,5	7 . 35 . 8,9		B.
	Regulus	3,5	17,3	31,1	44,9	59,1	12,6	9 . 59 . 26,3		B.
	γ Leonis	19,4	33,5	48,1	2,6	17,1	31,3	10 . 10 . 45,6		B.
	c Virginis	28,3	41,8	55,6	8,9	22,4	35,8	12 . 11 . 49,3		B.
	γ^1 Virginis	48,7	2,1	15,6	29,1	42,7	56,1	12 . 33 . 9,3		B.
	☽ 1 L.	13,9	27,6	41,3	55,2	9,4	23,1	12 . 53 . 36,4		B.
	Polaris SP. (very great motion)	34.36,4	42.51,2	50.53,6	59.13,8	7.19,6	......	13 . 23 . 53,4	+ 2 . 44,37	B.
	Spica (flaring)	0,2	14,1	27,8	41,2	55,2	9,1	13 . 16 . 22,4		B.
	Saturn 1 L.	14,1	......	41,1	......	9,0	......	13 . 53 . 35,6		B.
	Saturn 2 L.	......	30,8	......	57,9	......	25,1	13 . 53		B.
	Arcturus (blazing)	36,2	50,7	5,2	19,3	33,8	48,2	14 . 8 . 2,4		B.
May 27	(*b*) ⊙ 1 L.	19,1	33,4	48,2	3,1	17,5	32,1	4 . 15 . 46,2		B.
	⊙ 2 L.	35,2	50,0	4,9	19,2	34,0	48,1	4 . 18 . 2,7		B.
	Rigel (dancing)	3,8	17,1	31,0	44,3	58,0	11,7	5 . 6 . 25,0		B.
	Procyon	7,0	20,8	34,2	47,7	1,7	14,6	7 . 30 . 28,3		B.
	Venus 1 L. (hazy)	54,9	9,3	24,3	39,2	54,2	9,0	7 . 33 . 23,4		B.
	Polaris SP. (flaring)	34.33,8	42.45,4	50.54,2	59.12,8	7.23,4	......	13 . 23 . 53,6	+ 2 . 44,36	B.
	Spica	58,8	13,1	26,3	40,1	53,8	7,4	13 . 16 . 21,1		B.
	☽ 1 L. (ragged)	39,9	53,9	8,1	22,3	36,2	50,2	13 . 46 . 4,4		B.
	(*c*) Saturn 1 L.	0,3	......	27,4	40,9	......	8,9	13 . 53 . 22,1	– 2,70	B.
	Saturn 2 L.	......	17,0	......	......	57,7	......	13 . 52	+ 6,75	B.
	κ Virginis	34,4	48,5	2,2	16,1	29,7	43,2	14 . 3 . 57,4		B.
	Arcturus	34,6	49,2	3,6	17,9	32,4	46,5	14 . 8 . 1,1		B.
May 28	⊙ 1 L. (uneven & unsteady)	21,7	35,8	50,3	4,9	19,5	33,8	4 . 19 . 48,3		B.
	⊙ 2 L.	37,9	52,0	7,0	21,3	36,1	50,4	4 . 22 . 5,0		B.
	Mercury 1 L. (faint & unsteady)	38,0	53,1	8,3	22,8	38,1	52,9	6 . 1 . 7,8		B.
	Jupiter 1 L. (hazy & faint)	12,9	......	42,2	......	11,8	......	7 . 9 . 40,3		B.
	Jupiter 2 L.	......	30,1	......	59,3	......	28,4	7 . 9		B.
	Procyon	5,4	18,9	32,5	46,2	59,7	13,3	7 . 30 . 26,7		B.
	Venus 1 L. (dancing)	35,9	50,1	4,9	19,7	34,8	50,0	7 . 37 . 4,4		B.
	Regulus	0,5	14,2	28,2	42,1	56,0	9,6	9 . 59 . 23,3		B.
May 30	⊙ 1 L. (great motion)	26,3	40,8	55,4	10,2	24,7	39,0	4 . 27 . 53,3		B.
	⊙ 2 L.	42,9	57,6	12,4	26,9	42,0	56,2	4 . 30 . 10,5		B.
	Rigel (hazy, unsteady)	59,1	12,4	26,2	40,1	53,7	7,1	5 . 6 . 20,8		B.
	Jupiter 1 L.	51,7	......	21,1	......	50,4	......	7 . 11 . 19,7		B.
	Jupiter 2 L.	......	8,8	......	38,6	......	8,4	7 . 11		B.
	Procyon	2,6	16,1	29,6	43,2	56,9	10,3	7 . 30 . 23,7		B.
	Pollux	31,1	46,3	2,0	17,0	32,4	47,6	7 . 35 . 2,9		B.
	Venus 1 L.	46,0	0,8	15,6	30,4	45,7	59,2	7 . 44 . 15,0		B.
	β Leonis (very unsteady)	0,9	15,2	28,9	42,8	57,2	11,1	11 . 40 . 25,0		B.
	γ^1 Virginis	42,4	56,1	9,4	22,8	36,4	49,8	12 . 33 . 3,4		B.
	(*d*) Polaris SP.	34.33,6	42.41,8	50.49,8	59. 9,2	7.18,4	......	13 . 23 . 52,6	+ 2 . 44,35	B.
	Spica (very cloudy)	54,3	......	21,9	35,8	49,4	......	13 . 15	+ 10,24	B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, May 30. 2^h.

(*a*) Hurried observation: not good.
(*b*) Serrated edge, with much motion.
(*c*) Disturbed: the order of wires confused.
(*d*) Very cloudy: at times flaring and unsteady.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^{h}.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
4 . 11 . 1,24		+ 6,7	9,36			1,40	52,57	4 . 13 . 2,17	⊙'s center.
4 . 13 . 17,50									
5 . 5 . 45,70			45,96	38,72	52,76			5 . 6 . 38,83	Rigel.
5 . 45 . 23,94			24,05	16,98	52,93			5 . 46 . 16,96	α Orionis.
5 . 49 . 44,98			44,92					5 . 50 . 37,83	Mercury 1 L.
7 . 7 . 18,65			19,86					7 . 8 . 12,84	Jupiter's center.
7 . 7 . 21,13									
7 . 28 . 55,89			55,84					7 . 29 . 48,85	Venus 1 L.
7 . 34 . 22,95			22,86	15,84	52,98			7 . 35 . 15,87	Pollux.
9 . 58 . 44,97			45,03	38,24	53,21			9 . 59 . 38,18	Regulus.
10 . 10 . 2,51			2,50					10 . 10 . 55,66	γ Leonis.
12 . 11 . 8,87			9,02					12 . 12 . 2,30	*c* Virginis.
12 . 32 . 29,09			29,28					12 . 33 . 22,58	γ^1 Virginis.
12 . 52 . 55,27			55,48					12 . 53 . 48,80	☽ 1 L.
12 . 59 . 12,37	20,18		30,36	23,58	53,22			1 . 0 . 23,69	Polaris SP.
13 . 15 . 41,43	41,29		41,69	35,10	53,41			13 . 16 . 35,03	Spica.
13 . 52 . 54,95			56,70					13 . 53 . 50,08	Saturn's center.
13 . 52 . 57,93									
14 . 7 . 19,40			19,40	12,75	53,35			14 . 8 . 12,79	Arcturus.
4 . 15 . 2,80			10,97			1,53	53,96	4 . 17 . 5,20	⊙'s center.
4 . 17 . 19,16									
5 . 5 . 44,41			44,67	38,73	54,06			5 . 6 . 38,95	Rigel.
7 . 29 . 47,76			47,89	42,33	54,44			7 . 30 . 42,33	Procyon.
7 . 32 . 39,19			39,14					7 . 33 . 33,58	Venus 1 L.
12 . 59 . 11,56	19,37		29,55	24,29	54,74			1 . 0 . 24,34	Polaris SP.
13 . 15 . 40,08	39,94		40,34	35,09	54,75			13 . 16 . 35,15	Spica.
13 . 45 . 22,14			22,40					13 . 46 . 17,24	☽ 1 L.
13 . 52 . 41,22			42,92					13 . 53 . 37,76	Saturn's center.
13 . 52 . 44,10									
14 . 3 . 15,93			16,19					14 . 4 . 11,05	κ Virginis.
14 . 7 . 17,90			17,90	12,75	54,85			14 . 8 . 12,76	Arcturus.
4 . 19 . 4,90			13,13			1,60	55,56	4 . 21 . 8,98	⊙'s center.
4 . 21 . 21,38									
6 . 0 . 23,00			22,95					6 . 1 . 18,91	Mercury 1 L.
7 . 8 . 56,80			58,00					7 . 9 . 54,03	Jupiter's center.
7 . 8 . 59,27									
7 . 29 . 46,10			46,23	42,32	56,09			7 . 30 . 42,29	Procyon.
7 . 36 . 19,98			19,94					7 . 37 . 16,01	Venus 1 L.
9 . 58 . 41,98			42,04	38,22	56,18			9 . 59 . 38,27	Regulus.
4 . 27 . 9,95		+ 7,4	18,46			1,40	58,43	4 . 29 . 17,15	⊙'s center.
4 . 29 . 26,93									
5 . 5 . 39,91			40,21	38,74	58,53			5 . 6 . 38,94	Rigel.
7 . 10 . 35,72			37,17					7 . 11 . 36,02	Jupiter's center.
7 . 10 . 38,60									
7 . 29 . 43,20			43,37	42,31	58,94			7 . 30 . 42,24	Procyon.
7 . 34 . 17,05			16,99	15,82	58,83			7 . 35 . 15,86	Pollux.
7 . 43 . 30,38			30,38					7 . 44 . 29,26	Venus 1 L.
11 . 39 . 43,01			43,09	42,37	59,28			11 . 40 . 42,20	β Leonis.
12 . 32 . 22,90			23,13					12 . 33 . 22,29	γ^1 Virginis.
12 . 59 . 8,58	16,09		27,34	26,58	59,24			1 . 0 . 26,53	Polaris SP.
13 . 15 . 35,59	35,46		35,90	35,08	59,18			13 . 16 . 35,10	Spica.

Error of Collimation = – 0″,1.

Level Error = – 4″,07. From May 30. = – 3″,91.

Meridian Error from May 30 by Polaris SP. and Spica May 30.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
May 30	Saturn 1 L. ..... (clouds)	20,3	......	47,9	......	15,2	......	13 . 52 . 42,1		B.
	Saturn 2 L.	......	37,1	......	4,6	......	31,7	13 . 52		B.
	κ Virginis	30,2	44,1	57,7	11,4	25,2	38,8	14 . 3 . 52,3		B.
	Arcturus	30,3	44,9	59,2	13,5	28,0	41,9	14 . 7 . 56,5		B.
	5 Serpentis .... (very cloudy)	18,4	32,1	45,7	......	......	26,2	15 . 10 . 39,6	+ 2,73	B.
	α Coronæ Borealis	1,9	17,2	32,3	47,5	2,9	17,7	15 . 27 . 32,7		B.
	α Serpentis	33,2	47,1	0,6	14,1	27,7	40,9	15 . 36 . 54,7		B.
May 31	⊙ 1 L. ..... (much waving)	29,4	44,2	58,6	13,4	28,2	42,7	4 . 31 . 57,1		B.
	⊙ 2 L.	46,3	1,7	16,1	30,2	45,1	59,7	4 . 34 . 14,1		B.
	Procyon	1,5	14,9	28,4	42,0	55,7	9,1	7 . 30 . 22,3		B.
	Pollux	29,4	45,1	0,2	15,5	31,1	46,3	7 . 35 . 1,4		B.
	Venus 1 L. ..... (unsteady)	15,8	30,8	45,3	0,2	14,9	29,8	7 . 47 . 44.3		B.
	Regulus	55,2	9,9	23,7	37,6	51,7	5,3	9 . 59 . 19,1		B.
	β Leonis	59,5	13,8	27,7	41,7	55,8	9,6	11 . 40 . 23,5		B.
	Polaris SP. (blazing & unsteady)	34.29,6	42.40,2	50.51,4	59. 6,8	7.16,4	......	13 . 23 . 54,6	+ 2 . 44,35	B.
	Spica	53,0	7,1	20,7	34,1	47,7	1,7	13 . 16 . 15,2		B.
	Saturn 1 L.	7,9	......	35,3	......	3,3	......	13 . 52 . 29,9		B.
	Saturn 2 L.	......	24,5	......	52,1	......	19,3	13 . 52		B.
	Arcturus	29,1	43,2	57,7	12,1	26,5	40,6	14 . 7 . 55,1		B.
	α Serpentis .... (very cloudy)	......	......	......	12,7	26,4	39,8	15 . 35 . 53,2	− 20,37	B.
	α Herculis	29,6	43,7	57,6	11,4	25,5	39,0	17 . 6 . 52,8		B.
June 1	Spica .... (cloudy)	51,6	5,5	19,4	33,0	46,6	59,8	13 . 16 . 13,3		B.
June 2	⊙ 1 L. .... (waving)	37,8	52,3	7,2	21,5	56,4	51,1	4 . 40 . 5,3		B.
	⊙ 2 L.	55,0	9,4	24,0	38,7	53,1	8,0	4 . 42 . 22,1		B.
	Venus 1 L. (cloudy, unsteady)	2,9	18,0	32,4	47,2	2,2	16,9	7 . 54 . 31,3		B.
June 3	Regulus ...... (very cloudy)	51,8	......	......	32,8	......	1,1	9 . 59 . 14,7	− 6,87	B.
June 4	β Leonis	53,6	7,8	21,7	35,5	49,8	3,7	11 . 40 . 17,4		B.
	c Virginis	15,2	28,8	42,5	55,9	9,3	22,7	12 . 11 . 36,1		B.
	Polaris SP.	34.28,6	42.41,2	50.46,8	59. 3,6	7.16,2	......	13 . 23 . 47,2	+ 2 . 44,34	B.
	Spica	47,1	0,8	14,5	28,1	42,0	55,7	13 . 16 . 9,1		B.
	Saturn 1 L.	20,2	......	47,8	......	15,0	......	13 . 51 . 42,5		B.
	Saturn 2 L.	......	36,7	......	4,3	......	31,3	13 . 51		B.
	Arcturus	23,1	37,3	51,9	6,2	20,7	34,9	14 . 7 . 49,0		B.
June 6	⊙ 1 L... (cloudy and unsteady)	58,0	12,4	26,9	41,6	56,4	10,9	4 . 56 . 25,3		B.
June 8	⊙ 1 L. ..... (much motion)	9,8	24,4	39,2	53,7	8,5	23,3	5 . 4 . 37,9		B.
	⊙ 2 L.	27,3	42,1	56,7	11,5	26,4	41,1	5 . 6 . 55.5		B.
	(*a*) α Orionis	23,7	37,3	51,1	4,9	18,2	31,6	5 . 45 . 45,1		B.
	Mercury 1 L. (faint and hazy)	31,2	45,9	0,6	15,3	30,1	44,5	6 . 38 . 58,8		B.
	Procyon	48,8	2,8	16,2	29,6	43,2	56,7	7 . 30 . 10,3		B.
	Venus 1 L. ..... (unsteady)	39,6	54,1	8,7	23,2	38,0	52,3	8 . 13 . 7,0		B.
	Arcturus ...... (blazing)	17,1	30,8	45,4	0,1	14,4	28,6	14 . 7 . 43,0		B.
	ε Bootis	53,1	8,3	23,5	38,7	53,9	9,2	14 . 37 . 24,2		B.
	α^2 Libræ	56,1	9,3	23,8	37,7	51,9	5,3	14 . 41 . 19,2		B.
	5 Serpentis	5,0	18,5	31,9	45,5	59,1	12,5	15 . 10 . 25,9		B.
June 9	⊙ 1 L.	16,5	31,1	45,7	0,4	15,2	29,7	5 . 8 . 44,3		B.
	⊙ 2 L.	34,1	48,6	3,4	18,1	33,0	47,4	5 . 11 . 2,2		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, June 6. 1^{h}., and the level error found to be the same as the last.

(*a*) This observation doubtful from the great motion of the object and haziness of the atmosphere.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
13 . 52 . 1,37		+ 7,4	3,22			1,40	58,43	13 . 53 . 2,46	Saturn’s center.
13 . 52 . 4,47									
14 . 3 . 11,38			11,69					14 . 4 . 10,94	κ Virginis.
14 . 7 . 13,47			13,51	12,74	59,23			14 . 8 . 12,76	Arcturus.
15 . 9 . 59,13			59,33					15 . 10 . 58,64	5 Serpentis.
15 . 26 . 47,46			47,42	46,86	59,44			15 . 27 . 46,75	α Coronæ Bor.
15 . 36 . 14,04			14,21	13,50	59,29			15 . 37 . 13,55	α Serpentis.
4 . 31 . 13,37		+ 7,6	21,94				59,83	4 . 33 . 22,03	⊙’s center.
4 . 33 . 30,45									
7 . 29 . 41,98			42,16	42,31	60,15			7 . 30 . 42,43	Procyon.
7 . 34 . 15,57			15,52	15,82	60,30			7 . 35 . 15,79	Pollux.
7 . 47 . 0,15			0,16					7 . 48 . 0,44	Venus 1 L.
9 . 58 . 37,50			37,61	38,19	60,58			9 . 59 . 38,02	Regulus.
11 . 39 . 41,65			41,74	42,36	60,62			11 . 40 . 42,25	β Leonis.
12 . 59 . 7,52	15,03		26,58	27,33	60,75			1 . 0 . 27,17	Polaris SP.
13 . 15 . 34,21	34,08		34,54	35,07	60,53			13 . 16 . 35,15	Spica.
13 . 51 . 49,10			50,84					13 . 52 . 51,48	Saturn’s center.
13 . 51 . 51,97									
14 . 7 . 12,04			12,09	12,74	60,65			14 . 8 . 12,74	Arcturus.
15 . 35 . 12,65			12,83	13,50	60,67			15 . 36 . 13,57	α Serpentis.
17 . 6 . 11,37			11,47	12,28	60,81			17 . 7 . 12,30	α Herculis.
13 . 15 . 32,74			33,07	35,07	62,00	1,48	61,23	13 . 16 . 35,12	Spica.
4 . 39 . 21,65			30,16				62,71	4 . 41 . 33,16	⊙’s center.
4 . 41 . 38,62									
7 . 53 . 47,27			47,28					7 . 54 . 50,48	Venus 1 L.
9 . 58 . 33,23		+ 7,2	33,33	38,16	64,83	1,53	64,20	9 . 59 . 38,17	Regulus.
11 . 39 . 35,64			35,71	42,32	66,61		65,74	11 . 40 . 42,19	β Leonis.
12 . 10 . 55,79			55,96					12 . 12 . 2,48	c Virginis.
12 . 59 . 4,94	12,45		23,39	29,91	66,52			1 . 0 . 29,96	Polaris SP.
13 . 15 . 28,19	28,06		28,49	35,05	66,56			13 . 16 . 35,08	Spica.
13 . 51 . 1,37			3,01					13 . 52 . 9,63	Saturn’s center.
13 . 51 . 4,10									
14 . 7 . 6,16			6,19	12,72	66,53			14 . 8 . 12,83	Arcturus.
4 . 55 . 41,64			41,64				68,80	4 . 56 . 50,75	⊙ 1 L.
5 . 3 . 53,83			2,67			1,58	71,85	5 . 6 . 14,86	⊙’s center.
5 . 6 . 11,51									
5 . 45 . 4,56			4,71	17,05	72,34			5 . 46 . 16,94	α Orionis.
6 . 38 . 15,20			15,20					6 . 39 . 27,49	Mercury 1 L.
7 . 29 . 29,66			29,82	42,29	72,47			7 . 30 . 42,16	Procyon.
8 . 12 . 23,27			23,29					8 . 13 . 35,68	Venus 1 L.
14 . 6 . 59,91			59,94	12,70	72,76			14 . 8 . 12,72	Arcturus.
14 . 36 . 38,70			38,64	51,44	72,80			14 . 37 . 51,45	ε Bootis.
14 . 40 . 37,62			37,96	50,71	72,75			14 . 41 . 50,78	α^2 Libræ.
15 . 9 . 45,49			45,68					15 . 10 . 58,53	5 Serpentis.
5 . 8 . 0,41			9,26				73,43	5 . 10 . 23,03	⊙’s center.
5 . 10 . 18,12									

Error of Collimation = − 0″,1.

Level Error = − 3″,91.

Meridian Error from May 31 by Polaris SP. and Spica May 31.

……………………June 3 by Polaris SP. and Spica June 4.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
June 11	⊙ 1 L. } (unsteady)	30,1	44,8	59,4	14,1	28,8	43,4	5 . 16 . 58,1		B.
	⊙ 2 L. }	47,8	2,7	17,3	32,0	47,0	1,9	5 . 19 . 16,2		B.
	(*a*) Venus 1 L.	52,7	7,1	21,8	36,3	51,0	5,2	8 . 21 . 19,4		B.
	(*b*) Polaris SP.	34.26,6	42.38,2	50.42,8	58.57,4	7.11,6	......	13 . 23 . 40,2	+ 2 . 44,32	B.
	Spica	35,9	49,6	3,4	17,0	30,8	44,3	13 . 15 . 58,0		B.
	Saturn 1 L.	7,9	......	35,3	......	2,9	......	13 . 50 . 30,1		B.
	Saturn 2 L.	......	24,7	......	52,1	......	19,4	13 . 50		B.
	Arcturus	11,9	26,3	40,7	54,9	9,5	23,4	14 . 7 . 38,1		B.
	ε Bootis	47,9	3,7	18,6	33,9	49,3	4,4	14 . 37 . 19,7		B.
	α^2 Libræ	50,9	4,8	19,1	32,9	47,1	0,7	14 . 41 . 14,5		B.
	α Coronæ Borealis	43,5	58,9	14,1	29,0	44,6	59,3	15 . 27 . 14,7		B.
	α Serpentis	14,8	28,3	42,1	55,6	9,3	23,1	15 . 35 . 36,4		B.
	θ Libræ	31,4	45,5	59,9	13,9	27,8	41,8	15 . 43 . 55,7		B.
	δ Scorpii	38,8	53,4	8,2	22,7	37,4	.51,9	15 . 50 . 6,2		B.
	α Herculis	12,5	26,7	40,4	54,4	8,3	22,2	17 . 6 . 36,0		C.
	α Ophiuchi	22,0	35,7	49,4	3,2	17,1	31,0	17 . 26 . 44,8		C.
	β Aurigæ SP.	13,6	32,3	51,0	10,6	29,3	48,8	17 . 47 . 8,0		C.
	ζ Aquilæ	......	8,3	22,5	36,1	50,0	4,0	18 . 57 . 17,6	– 6,93	C.
June 13	β Leonis (very cloudy)	39,4	53,6	7,8	21,5	......	......	11 . 38	+ 21,00	B.
	Polaris SP.	34.21,2	42.31,8	50.38,6	58.57,4	7. 7,4	......	13 . 23 . 38,6	+ 2 . 44,32	B.
	Spica	32,8	46,6	0,5	14,1	27,8	41,3	13 . 15 . 55,0		B.
	Saturn 1 L.	50,9	......	17,9	......	45,3	......	13 . 50 . 12,3		B.
	Saturn 2 L.	......	7,4	......	34,9	......	2,1	13 . 50		B.
	(*c*) Arcturus	8,8	23,3	37,8	52,2	6,6	20,8	14 . 7 . 34,9		B.
	(*c*) ε Bootis	......	......	......	30,8	46,2	1,2	14 . 37	– 15,30	B.
	(*c*) α^2 Libræ	......	......	......	29,4	44,1	......	14 . 41 . 11,4	– 18,65	B.
	(*c*) α Coronæ Borealis	40,5	55,7	11,1	26,2	41,4	56,3	15 . 27 . 11,4		B.
	(*c*) α Serpentis	11,7	25,3	39,1	52,9	6,5	20,6	15 . 35 . 33,2		B.
June 14	(*c*) ⊙ 2 L.	10,3	25,1	40,0	54,4	9,3	24,0	5 . 31 . 38,3		B.
	Procyon	39,5	53,1	6,8	20,2	33,7	47,1	7 . 30 . 0,9		B.
	(*c*) Venus 1 L.	......	......	......	......	15,7	29,9	8 . 28 . 43,9	– 28,86	B.
	(*c*) Regulus	......	......	......	16,0	29,9	43,4	9 . 58 . 57,1	– 20,74	B.
	Polaris SP. (unsteady)	34.20,6	42.32,2	50.39,4	58.57,6	7. 8,8	......	13 . 23 . 39,2	+ 2 . 44,32	B.
	Spica	31,1	45,0	58,8	12,3	26,1	39,7	13 . 15 . 53,2		B.
	Saturn 1 L.	42,2	......	9,3	......	37,2	......	13 . 50 . 3,9		B.
	Saturn 2 L.	......	58,6	......	26,0	......	53,4	13 . 49		B.
	Arcturus	7,6	21,8	36,1	50,4	5,0	19,1	14 . 7 . 33,2		B.
	ε Bootis	43,4	58,5	14,1	29,0	44,4	59,3	14 . 37 . 14,9		B.
	α^2 Libræ	46,1	0,2	14,1	28,2	42,1	56,0	14 . 41 . 10,1		B.
	α Coronæ Borealis	38,9	54,1	9,3	24,4	39,9	54,7	15 . 27 . 10,1		B.
	α Serpentis	10,2	23,9	37,4	50,9	4,9	18,2	15 . 35 . 31,5		B.
	Polaris (very steady)	34.53,2	43.10,2	51.23,6	59.35,4	7.52,8	16. 2,4	1 . 24 . 10,6		B.
	Aldebaran	25,1	39,0	53,1	7,1	20,9	35,2	4 . 25 . 49,0		B.
June 15	⊙ 1 L. } (unsteady)	59,7	14,5	29,3	44,1	59,1	13,3	5 . 33 . 28,2		B.
	⊙ 2 L. }	17,9	32,3	47,2	2,2	17,0	31,4	5 . 35 . 46,3		B.
	(*d*) Jupiter 1 L.	34,6	49,1	3,3	17,7	32,9	47,4	7 . 25 . 1,7		B.
	Procyon (hazy)	38,1	51,7	5,1	18,6	32,2	45,7	7 . 29 . 59,1		B.
	Pollux (very cloudy)	......	......	......	......	7,8	23,1	7 . 34 . 38,2	– 30,66	B.
	Venus 1 L. (dancing badly)	34,3	48,5	3,1	17,4	31,7	46,1	8 . 31 . 0,5		B.
	Regulus (very cloudy)	32,7	46,5	0,8	14,5	28,4	41,8	9 . 58 . 55,6		B.
	β Leonis	36,2	50,2	4,4	18,3	32,4	46,1	11 . 40 . 0,1		B.
	Polaris SP.	34.21,8	42.33,2	50.38,6	58.57,2	7. 7,8	......	13 . 23 . 39,2	+ 2 . 44,32	B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, June 13. 0^h.

(*a*) Wind louder than the clock: cloudy at times.
(*b*) Doubtful: not used for meridian error.
(*c*) Cloudy in all these observations.
(*d*) So faint and hazy that only one limb was taken.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
5 . 16 . 14,10		+7,4	23,12			1,55	76,75	5 . 18 . 40,21	⊙'s center.
5 . 18 . 32,13									
8 . 20 . 36,22			36,24					8 . 21 . 53,53	Venus 1 L.
12 . 59 . 0,45			19,21	35,03	75,82			1 . 0 . 36,80	Polaris SP.
13 . 15 . 17,00			17,31	35,01	77,70			13 . 16 . 34,92	Spica.
13 . 49 . 49,05			50,86					13 . 51 . 8,49	Saturn's center.
13 . 49 . 52,07									
14 . 6 . 54,97			55,01	12,69	77,68			14 . 8 . 12,67	Arcturus.
14 . 36 . 33,93			33,88	51,43	77,55			14 . 37 . 51,57	ε Bootis.
14 . 40 . 32,86			33,21	50,70	77,49			14 . 41 . 50,91	α^2 Libræ.
15 . 26 . 29,16			29,12	46,86	77,74			15 . 27 . 46,87	α Coronæ Bor.
15 . 34 55,66			55,83	13,54	77,71			15 . 36 . 13,59	α Serpentis.
15 . 43 . 13,71			14,08					15 . 44 . 31,84	θ Libræ.
15 . 49 . 22,65			22,98					15 . 50 . 40,75	δ Scorpii.
17 . 5 . 54,36			54,44	12,40	77,96			17 . 7 . 12,29	α Herculis.
17 . 26 . 3,31			3,42	21,49	78,07			17 . 27 . 21,29	δ Ophiuchi.
17 . 46 . 10,51			11,27					17 . 47 . 29,16	β Aurigæ SP.
18 . 56 . 36,15			36,25					18 . 57 . 54,25	ζ Aquilæ.
11 . 39 . 21,57			21,64	42,23	80,59	1,60	79,75	11 . 40 . 42,17	β Leonis.
12 . 58 . 56,82	4,82		16,07	36,70	80,63			1 . 0 . 36,69	Polaris SP.
13 . 15 . 14,01	13,87		14,31	34,99	80,68			13 . 16 . 34,95	Spica.
13 . 49 . 31,60			33,49					13 . 50 . 54,16	Saturn's center.
13 . 49 . 34,80									
14 .. 6 52,05			52,07	12,67	80,60			14 . 8 . 12,76	Arcturus.
14 . 36 . 30,77			30,70	51,41	80,71			14 . 37 . 51,42	ε Bootis.
14 . 40 . 29,65			30,00	50,70	80,70			14 . 41 . 50,73	α^2 Libræ.
15 . 26 . 26,09			26,04	46,86	80,82			15 . 27 . 46,81	α Coronæ Bor.
15 . 34 . 52,76			52,91	13,54	80,63			15 . 36 . 13,70	α Serpentis.
5 . 30 . 54,49			54,49			1,64	81,36	5 . 32 . 16,23	⊙ 2 L.
7 . 29 . 20,18			20,34	42,30	81,96			7 . 30 . 42,21	Procyon.
8 . 28 . 0,97			0,98					8 . 29 . 22,92	Venus 1 L.
9 . 58 . 15,86			15,96	38,07	82,11			9 . 59 . 38,00	Regulus.
12 . 58 . 57,29	5,29		16,54	37,50	80,96			1 . 0 . 38,79	Polaris SP.
13 . 15 . 12,31			12,61	34,98	82,37			13 . 16 . 34,88	Spica.
13 . 49 . 23,15			24,86					13 . 50 . 47,16	Saturn's center.
13 . 49 . 26,00									
14 . 6 . 50,45			50,47	12,66	82,19			14 . 8 . 12,79	Arcturus.
14 . 36 . 29,09			29,02	51,40	82,38			14 . 37 . 51,38	ε Bootis.
14 . 40 . 28,12			28,47	50,69	82,22			14 . 41 . 50,85	α^2 Libræ.
15 . 26 . 24,48			24,43	46,85	82,42			15 . 27 . 46,84	α Coronæ Bor.
15 . 34 . 51,00			51,15	13,54	82,39			15 . 36 . 13,58	α Serpentis.
0 . 59 . 35,46	27,13		16,62	37,90	81,28	1,65	82,99	1 . 0 . 39,68	Polaris.
4 . 25 . 7,06			7,12	30,49	83,37			4 . 26 . 30,41	Aldebaran.
5 . 32 . 44,03			53,03					5 . 35 . 16,40	⊙'s center.
5 . 35 . 2,04									
7 . 24 . 18,10			18,10					7 . 25 . 41,60	Jupiter 1 L.
7 . 29 . 18,65			18,81	42,30	83,49			7 . 30 . 42,32	Procyon.
7 . 33 . 52,37			52,29	15,81	83,52			7 . 35 . 15,80	Pollux.
8 . 30 . 17,37			17,39					8 . 31 . 40,96	Venus 1 L.
9 . 58 . 14,33			14,43	38,07	83,64			9 . 59 . 38,11	Regulus.
11 . 39 . 18,25			18,32	42,21	83,89			11 . 40 . 42,11	β Leonis.
12 . 58 . 57,29	5,29		16,54	38,28	81,74			1 . 0 . 40,42	Polaris SP.

Error of Collimation = − 0″,1.

Level Error = − 3″,91. From June 13. = − 4″,17.

Meridian Error from June 11 by Polaris SP. and Spica on June 13, and by Polaris SP., Polaris, and Polaris SP., June 14 and 15. The two methods both give 7″,4.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
June 15	Spica	29,5	43,4	57,1	10,9	24,6	38,1	13 . 15 . 51,6		B.
	Saturn 1 L. .(extremely faint)	34,4	......	1,4	......	29,0	......	13 . 49 . 56,1		B.
	Saturn 2 L.	......	50,9	......	18,1	......	45,3	13 . 49		B.
	Arcturus.......... (hazy)	5,5	20,1	34,3	48,6	3,2	17,3	14 . 7 . 31,6		B.
	ϵ Bootis	42,1	57,1	12,3	27,5	43,0	57,7	14 . 37 . 13,1		B.
	α^2 Libræ	44,4	58,5	12,7	26,4	40,7	54,3	14 . 41 . 8,3		B.
June 16	⊙ 1 L. ......(hazy, unsteady)	8,1	22,4	37,3	52,1	7,3	21,6	5 . 37 . 36,2		B.
	⊙ 2 L.	25,7	40,6	55,1	10,0	24,6	39,3	5 . 39 . 54,0		B.
	Saturn 1 L.	26,6	......	53,9	......	21,2	......	13 . 49 . 48,4		B.
	Saturn 2 L.	......	43,1	......	10,3	......	37,9	13 . 49		B.
	Arcturus	3,8	18,2	32,6	47,1	1,5	15,8	14 . 7 . 30,1		B.
	ϵ Bootis..............	40,1	55,3	10,7	25,9	41,2	56,1	14 . 37 . 11,3		B.
	α Coronæ Borealis	34,8	51,0	6,1	20,9	36,5	51,3	15 . 27 . 6,7		B.
	α Serpentis	7,1	20,7	34,2	47,9	1,5	15,0	15 . 35 . 28,4		B.
June 17	(*a*) ⊙ 1 L.	15,9	30,2	44,8	59,8	14,5	29,1	5 . 42 . 43,7		B.
	⊙ 2 L.	33,9	48,3	3,1	18,2	33,1	47,2	5 . 45 . 2,4		B.
June 18	⊙ 1 L. .... (waving)	23,5	38,4	53,1	8,0	22,8	37,3	5 . 46 . 52,1		B.
	⊙ 2 L.	41,9	56,2	11,3	26,0	41,1	55,3	5 . 49 . 10,2		B.
	Procyon . .(cloudy and unsteady)	33,1	46,6	0,3	13,9	27,3	40,8	7 . 30 . 54,2		B.
	Pollux	1,4	17,0	32,1	47,6	3,1	18,1	7 . 35 . 33,4		B.
	Regulus	27,9	41,8	55,7	9,4	23,4	37,0	9 . 59 . 50,8		B.
	β Leonis ...... (very cloudy)	31,3	45,3	59,5	13,4	27,5	41,8	11 . 40 . 55,2		B.
	Spica	24,6	38,5	52,1	6,0	20,0	33,3	13 . 16 . 47,1		B.
	Saturn 1 L. . (faint and hazy)	12,8	......	40,0	......	7,1	......	13 . 50 . 34,1		B.
	Saturn 2 L.	......	29,1	......	56,3	......	23,4	13 . 50		B.
	Arcturus	0,8	15,2	29,4	44,1	58,6	12,5	14 . 8 . 26,9		B.
June 19	Rigel .... (very cloudy)	26,4	40,1	53,8	7,3	21,1	35,0	5 . 6 . 48,2		B.
June 20	⊙ 2 L... (cloudy and unsteady)	58,1	12,8	27,4	42,1	57,0	11,4	5 . 57 . 26,2		B.
	Pollux .... (clouds)	......	......	29,3	44,7	0,1	15,2	7 . 35 . 30,5	– 15,33	B.
	α Hydræ	18,9	32,4	46,1	59,7	13,6	27,0	9 . 19 . 40,7		B.
	Regulus	24,9	38,8	52,6	6,5	20,3	34,0	9 . 59 . 48,1		B.
	☽ 1 L. .... (uneven)	25,8	39,7	54,0	8,1	22,2	36,0	10 . 56 . 50,0		B.
	β Leonis	28,6	42,3	56,2	10,3	24,5	38,4	11 . 40 . 52,2		B.
	Polaris SP. (clouds, unsteady)	35.16,2	43.26,6	51.32,2	59.50,2	8. 1,8	......	13 . 24 . 30,8	+ 2 . 44,32	B.
	Spica	21,7	35,3	49,1	3,0	16,9	30,2	13 . 16 . 44,0		B.
	Saturn 1 L. . (faint and hazy)	0,1	......	27,1	......	54,7	......	13 . 50 . 21,4		B.
	Saturn 2 L.	......	16,5	......	43,4	......	11,2	13 . 50		B.
	Arcturus	58,1	12,2	26,4	41,1	55,3	9,4	14 . 8 . 23,9		B.
	ϵ Bootis .... (very cloudy)	34,1	49,2	4,6	19,4	34,3	50,2	14 . 37 . 5,4		B.
June 23	⊙ 1 L. ..(very unsteady and cloudy)	4,2	18,9	33,7	48,2	3,4	18,1	6 . 7 . 32,3		B.
	⊙ 2 L.	22,1	37,0	......	6,8	21,2	36,0	6 . 9	+ 5,87	B.
	Venus 1 L.	53,9	8,1	22,2	36,4	50,9	5,1	8 . 46 . 19,0		B.
June 24	⊙ 1 L. ... (cloudy and unsteady)	12,3	26,9	41,4	56,6	11,2	25,7	6 . 11 . 40,4		B.
	⊙ 2 L.	30,1	45,0	59,9	......	......	44,0	6 . 13 . 58,4	+ 2,98	B.
	(*b*) Saturn 1 L. (very faint, cloudy)	......	......	6,2	......	32,9	......	13 . 49 . 59,7	– 13,59	B.
	Saturn 2 L.	......	......	......	23,1	......	50,2	13 . 49	– 13,63	B.
	Arcturus	51,9	6,8	20,5	35,1	49,4	3,9	14 . 8 . 18,2		B.
	☽ 1 L.	36,1	50,0	3,9	18,3	32,8	47,0	14 . 15 . 1,3		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
From Saturn June 24,.......WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
June 16. 23^h. The clock was put forward 1^m.
The Transit levelled, June 20. 0^h.
The Transit reversed, June 24. 6^h., and levelled June 25. 1^h.

(*a*) Very bad jerking motion. | (*b*) Shortly after the reversion of the transit.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
13 . 15 . 10,74		+ 7,4	11,04	34,98	83,94	1,65	82,99	13 . 16 . 34,94	Spica.
13 . 49 . 15,22			16,95					13 . 50 . 40,89	Saturn's center.
13 . 49 . 18,10									
14 . 6 . 48,66			48,68	12,66	83,98			14 . 8 . 12,64	Arcturus.
14 . 36 . 27,55			27,48	51,40	83,92			14 . 37 . 51,48	ε Bootis.
14 . 40 . 26,47			26,82	50,69	83,87			14 . 41 . 50,82	α^2 Libræ.
5 . 36 . 52,14			1,02			1,63	84,65	5 . 39 . 26,05	⊙'s center.
5 . 39 . 9,90									
13 . 49 . 7,52			9,26					13 . 50 . 34,85	Saturn's center.
13 . 49 . 10,43									
14 . 6 . 47,02			47,04	12,65	85,61			14 . 8 . 12,65	Arcturus.
14 . 36 . 25,80			25,73	51,39	85,66			14 . 37 . 51,37	ε Bootis.
15 . 26 . 21,04			20,99	46,85	85,86			15 . 27 . 46,68	α Coronæ Bor.
15 . 34 . 47,83			47,98	13,55	85,57			15 . 36 . 13,69	α Serpentis.
5 . 41 . 59,72			8,87			1,54	26,28	5 . 43 . 35,52	⊙'s center.
5 . 44 . 18,03									
5 . 46 . 7,89		+ 7,2	16,93				27,87	5 . 47 . 45,17	⊙'s center.
5 . 48 . 26,00									
7 . 30 . 13,74			13,89	42,31	28,42			7 . 30 . 42,24	Procyon.
7 . 34 . 47,53			47,45	15,82	28,37			7 . 35 . 15,81	Pollux.
9 . 59 . 9,43			9,52	38,05	28,53			9 . 59 . 38,03	Regulus.
11 . 40 . 13,43			13,49	42,18	28,69			11 . 40 . 42,11	β Leonis.
13 . 16 . 5,94			6,23	34,96	28,73			13 . 16 . 34,95	Spica.
13 . 49 . 53,50			55,16					13 . 50 . 23,92	Saturn's center.
13 . 49 . 56,27									
14 . 7 . 43,93			43,94	12,64	28,70			14 . 8 . 12,72	Arcturus.
5 . 6 . 7,42			7,69	38,97	31,28	1,48	30,92	5 . 6 . 38,92	Rigel.
5 . 56 . 42,14			42,11					5 . 57 . 13,39	⊙ 2 L.
7 . 34 . 44,63			44,53	15,83	31,30			7 . 35 . 15,92	Pollux.
9 . 18 . 59,78			0,05	31,51	31,46			9 . 19 . 31,54	α Hydræ.
9 . 59 . 6,46			6,54	38,03	31,49			9 . 59 . 38,08	Regulus.
10 . 56 . 7,97			8,05					10 . 56 . 39,64	☽ 1 L.
11 . 40 . 10,35			10,39	42,16	31,77			11 . 40 . 42,03	β Leonis.
12 . 59 . 50,62	59,08		10,02	41,75	31,73			1 . 0 . 41,74	Polaris SP.
13 . 16 . 2,88	2,73		3,16	34,94	31,78			13 . 16 . 34,90	Spica.
13 . 49 . 40,82			42,52					13 . 50 . 14,29	Saturn's center.
13 . 49 . 43,70									
14 . 7 . 40,91			40,90	12,62	31,72			14 . 8 . 12,69	Arcturus.
14 . 36 . 19,60			19,50	51,36	31,86			14 . 36 . 51,32	ε Bootis.
6 . 6 . 48,40			57,41			1,43	35,22	6 . 8 . 32,99	⊙'s center.
6 . 9 . 6,49									
8 . 45 . 36,52			36,54					8 . 46 . 12,28	Venus 1 L.
6 . 10 . 56,36			5,38				36,65	6 . 12 . 42,40	⊙'s center.
6 . 13 . 14,46									
13 . 49 . 19,34		+ 10,6	21,58					13 . 49 . 59,05	Saturn's center.
13 . 49 . 23,02									
14 . 7 . 35,11			35,16	12,58	37,42			14 . 8 . 12,65	Arcturus.
14 . 14 . 18,49			18,94					14 . 14 . 56,44	☽ 1 L.

Error of Collimation = – 0″,1. From Saturn June 24. = – 1″,0.

Level Error = – 4″,17. From June 19. = – 4″,42. From Saturn, June 24. = – 4″,73.

Meridian Error from June 18, by Polaris SP. and Spica, June 20

Meridian Error from Saturn June 24 by Polaris, Polaris SP., and Polaris on June 24 and 25.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
June 24	ε Bootis	28,1	43,5	58,2	13,9	29,1	44,1	14 . 37 . 59,7		B.
	(*a*) α^2 Libræ .... (cloudy)	31,0	44,7	58,5	13,0	26,7	41,4	14 . 41 . 55,6		B.
	(*b*) ι^1 Libræ..............	34,2	48,7	2,8	17,0	31,0	45,4	15 . 2 . 59,5		B.
	α Coronæ Borealis.....	23,9	38,9	53,7	9,1	24,2	39,7	15 . 27 . 54,9		B.
	(*b*) α Serpentis	55,2	9,0	22,2	35,7	49,4	3,2	15 . 36 . 16,8		B.
	(*b*) Polaris	35.58,4	44.10,6	52.17,2	0.34,6	8.46,4	16.58,8	1 . 25 . 14,2		B.
June 25	⊙ 1 L. ..... (much waving)	20,1	34,7	49,2	4,4	19,0	33,6	6 . 15 . 48,3		B.
	⊙ 2 L.	38,0	52,6	7,5	22,3	37,0	51,8	6 . 18 . 6,5		B.
	Venus 1 L...... (very cloudy)	......	......	......	59,0	13,3	27,4	8 . 48 . 41,4	− 21,28	B.
	(*b*) Regulus	17,8	31,9	45,1	59,2	13,0	26,7	9 . 59 . 41,1		B.
	(*c*) β Leonis ..... (cloudy)	21,5	35,4	49,0	3,2	17,1	31,1	11 . 40 . 45,1		B.
	Polaris SP.	......	43.14,4	51.27,8	59.41,4	7.58,2	16. 3,6	13 . 24 . 16,6	− 4 . 6,83	B.
	Saturn 1 L. .. (very faint)	35,2	......	2,1	......	29,9	......	13 . 49 . 57,1		B.
	Saturn 2 L.	......	51,5	......	19,1	......	46,1	13 . 49		B.
	(*d*) Arcturus	50,9	5,0	19,1	33,4	48,1	2,3	14 . 8 . 17,1		B.
	ε Bootis	26,9	42,1	56,9	12,4	27,7	43,1	14 . 37 . 58,3		B.
	(*b*) α^2 Libræ	29,5	43,3	57,1	11,5	25,1	39,4	14 . 41 . 53,3		B.
	ι^1 Libræ	32,9	47,1	0,9	15,7	30,0	44,1	15 . 2 . 58,3		B.
	☽ 1 L.................	45,0	59,6	13,9	29,0	43,3	58,2	15 . 12 . 13,0		B.
	α Coronæ Borealis	22,3	37,6	52,3	7,9	23,1	38,1	15 . 27 . 53,3		B.
	η Libræ	32,2	45,9	0,1	14,1	27,7	42,0	15 . 34 . 55,9		B.
	θ Libræ	10,3	24,0	38,1	52,2	6,4	20,4	15 . 44 . 34,5		B.
	δ Ophiuchi	27,8	41,1	54,3	8,1	21,6	35,1	16 . 5 . 48,5		B.
	Antares........ (flaming)	0,1	14,3	29,1	44,7	59,4	14,5	16 . 19 . 29,4		B.
	Polaris	35.57,8	44. 9,2	52.15,8	0.33,6	8.44,6	16.59,4	1 . 25 . 15,6		B.
June 26	☽ 1 L. .... (cloudy)	22,1	37,3	52,4	7,9	23,1	38,2	16 . 14 . 53,8		B.
	(*e*) α Ophiuchi ...... (cloudy)	59,9	13,5	27,1	41,1	54,8	8,6	17 . 27 . 22,3		B.
June 27	Mars 2 L.............	12,4	26,7	40,7	54,9	9,6	23,3	3 . 27 . 37,7		B.
	Rigel	14,9	28,3	41,8	55,5	8,9	22,8	5 . 6 . 36,4		B.
June 28	⊙ 1 L. . (very unsteady, clouds)	42,8	57,1	11,8	26,9	41,3	56,1	6 . 28 . 10,9		B.
	⊙ 2 L.	0,4	15,1	29,9	44,4	59,1	14,0	6 . 30 . 28,8		B.
	Venus 1 L.	49,1	3,4	16,7	31,2	44,9	59,3	8 . 51 . 13,5		B.
	Regulus	13,1	26,8	40,6	54,4	8,3	22,1	9 . 59 . 36,0		B.
	β Leonis	16,5	30,6	44,6	58,3	12,2	26,5	11 . 40 . 40,3		B.
	Polaris SP.	34.58,8	43.15,4	51.28,2	59.40,6	7.58,2	......	13 . 24 . 14,6	+ 2 . 44,21	B.
	Spica	9,8	23,5	37,1	50,9	4,5	18,1	13 . 16 . 31,9		B.
	Arcturus.............	45,9	0,1	14,1	28,9	43,1	57,3	14 . 8 . 11,8		B.
	θ Libræ	5,6	19,8	33,2	47,8	2,0	15,9	15 . 44 . 30,3		B.
	δ Ophiuchi	22,7	36,1	49,9	3,4	17,0	30,4	16 . 5 . 44,0		B.
	Antares	54,9	9,8	24,4	39,7	55,1	10,1	16 . 19 . 24,9		B.
	α Herculis	46,9	1,1	14,4	28,7	42,4	56,2	17 . 7 . 10,4		B.
	α Ophiuchi .... (very hazy)	56,1	10,2	23,8	37,5	51,8	5,3	17 . 27 . 19,2		B.
	μ^1 Sagittarii ..... (hazy)	32,3	46,9	1,1	15,4	29,9	44,4	18 . 3 . 59,1		B.
	δ Sagittarii.	1,6	17,1	32,0	47,9	3,4	19,0	18 . 10 . 34,3		B.
	(*f*) ☽ 1 L.................	35,4	51,2	7,0	22,8	38,5	54,4	18 . 34 . 10,5		B.
	☽ 2 L................	13,9	29,2	45,0	1,1	17,0	33,1	18 . 36 . 48,8		B.
	τ Sagittarii....... (hazy)	14,2	29,3	44,2	0,1	15,1	30,4	18 . 56 . 45,7		B.
	h^2 Sagittarii	16,5	31,1	46,0	1,3	16,1	30,7	19 . 26 . 46,1		B.
	Polaris	......	44. 7,2	52.18,6	0.33,4	8.40,8	16.57,8	1 . 25 . 13,2	− 4 . 5,92	B.
	Rigel .... (very cloudy)	13,6	27,1	40,4	54,2	7,7	21,5	5 . 6 . 35,0		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, June 27. 0^h.

(*a*) Not used for clock error: the intervals are unsatisfactory.
(*b*) Cloudy in all these observations.
(*c*) The 6th wire was set down 30,1, evidently 1^s wrong.
(*d*) Disturbed.
(*e*) Not used for clock rate.
(*f*) Correction applied for defect of illumination of 1 L. = − 0^s,01.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
14 . 37 . 13,80		+ 10,6	13,72	51,33	37,61	1,43	36,65	14 . 37 . 51,24	ε Bootis.
14 . 41 . 12,98			13,46	50,65	37,19			14 . 41 . 50,99	α^2 Libræ.
15 . 2 . 16,94			17,47					15 . 2 . 55,04	ι^1 Libræ.
15 . 27 . 9,20			9,14	46,81	37,67			15 . 27 . 46,71	α Coronæ Bor.
15 . 35 . 35,93			36,15	13,54	37,39			15 . 36 . 13,73	α Serpentis.
1 . 0 . 34,31	22,73		7,68	45,31	37,63	1,47	38,06	1 . 0 . 45,80	Polaris.
6 . 15 . 4,18			13,22					6 . 16 . 51,67	⊙'s center.
6 . 17 . 22,24									
8 . 47 . 58,99			59,07					8 . 48 . 37,67	Venus 1 L.
9 . 58 . 59,26			59,41	38,00	38,59			9 . 59 . 38,08	Regulus.
11 . 40 . 3,20			3,32	42,12	38,80			11 . 40 . 42,10	β Leonis.
12 . 59 . 40,17	51,37		7,48	45,75	38,27			1 . 0 . 46,34	Polaris SP.
13 . 49 . 16,07			17,88					13 . 49 . 56,79	Saturn's center.
13 . 49 . 18,90									
14 . 7 . 33,70			33,75	12,58	38,83			14 . 8 . 12,67	Arcturus.
14 . 37 . 12,48			12,40	51,32	38,92			14 . 37 . 51,36	ε Bootis.
14 . 41 . 11,31			11,79	50,65	38,86			14 . 41 . 50,75	α^2 Libræ.
15 . 2 . 15,57			16,10					15 . 2 . 55,08	ι^1 Libræ.
15 . 11 . 28,86			29,39					15 . 12 . 8,38	☽ 1 L.
15 . 27 . 7,80			7,74	46,80	39,06			15 . 27 . 46,75	α Coronæ Bor.
15 . 34 . 13,99			14,47					15 . 34 . 53,48	η Libræ.
15 . 43 . 52,27			52,77					15 . 44 . 31,79	θ Libræ.
16 . 5 . 8,07			8,22	47,42	39,20			16 . 5 . 47,26	δ Ophiuchi.
16 . 18 . 44,50			45,12	24,06	38,94			16 . 19 . 24,18	Antares.
1 . 0 . 33,71	22,13		7,08	46,21	39,13		39,53	1 . 0 . 46,67	Polaris.
16 . 14 . 7,83			8,43					16 . 14 . 48,95	☽ 1 L.
17 . 26 . 41,04			41,19	21,62	40,43			17 . 27 . 21,79	α Ophiuchi.
3 . 26 . 55,04		+ 10,3	55,11			1,50	42,81	3 . 27 . 38,14	Mars 2 L.
5 . 5 . 55,51			55,90	39,11	43,21			5 . 6 . 39,03	Rigel.
6 . 27 . 26,70			35,62					6 . 29 . 18,84	⊙'s center.
6 . 29 . 44,53									
8 . 50 . 31,15			31,23					8 . 51 . 14,59	Venus 1 L.
9 . 58 . 54,47			54,60	37,99	43,39			9 . 59 . 38,04	Regulus.
11 . 39 . 58,43			58,53	42,09	43,56			11 . 40 . 42,07	β Leonis.
12 . 59 . 40,18	51,23		6,89	48,37	41,48			1 . 0 . 50,51	Polaris SP.
13 . 15 . 50,82			51,22	34,88	43,66			13 . 16 . 34,86	Spica.
14 . 7 . 28,75			28,79	12,55	43,76			14 . 8 . 12,49	Arcturus.
15 . 43 . 47,80			48,28					15 . 44 . 32,07	θ Libræ.
16 . 5 . 3,36			3,49	47,42	43,93			16 . 5 . 47,31	δ Ophiuchi.
16 . 18 . 39,85			40,45	24,07	43,62			16 . 19 . 24,28	Antares.
17 . 6 . 28,59			28,69	12,50	43,81			17 . 7 . 12,56	α Herculis.
17 . 26 . 37,70			37,83	21,63	43,80			17 . 27 . 21,73	α Ophiuchi.
18 . 3 . 15,59			16,13					18 . 4 . 0,07	μ^1 Sagittarii.
18 . 9 . 47,90			48,56					18 . 10 . 32,51	δ Sagittarii.
18 . 33 . 22,83			23,46					18 . 34 . 7,42	☽ 1 L.
18 . 36 . 1,15			1,78					18 . 36 . 45,75	☽ 2 L.
18 . 55 . 59,85			0,48					18 . 56 . 44,47	τ Sagittarii.
19 . 26 . 1,11			1,71					19 . 26 . 45,74	h^2 Sagittarii.
1 . 0 . 32,58	21,16		6,53	48,77	42,24	1,50	44,28	1 . 0 . 50,87	Polaris.
5 . 5 . 54,21			54,60	39,12	44,52			5 . 6 . 39,20	Rigel.

Error of Collimation = − 1″,0.

Level Error = − 4″,73. From June 26. = − 4″,65.

Meridian Error from June 27 by Polaris SP. and Polaris June 28, allowing 0ˢ,37 for loss of clock and change of Æ.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
June 29	(a) ⊙ 2 L.	7,7	22,1	36,4	51,3	6,1	21,1	6 . 34 . 35,4		B.
	δ Ophiuchi	21,5	35,1	48,3	1,7	15,3	29,1	16 . 5 . 42,5		B.
	α Herculis	45,2	59,1	13,1	27,0	40,7	55,0	17 . 7 . 9,1		B.
	(b) α Ophiuchi	54,7	8,8	22,1	35,9	49,7	3,7	17 . 27 . 17,5		B.
	μ¹ Sagittarii...........	30,6	44,9	59,2	14,1	28,2	42,8	18 . 3 . 57,4		B.
	δ Sagittarii	59,9	15,3	30,5	46,2	1,9	17,3	18 . 10 . 32,9		B.
	τ Sagittarii............	12,8	27,8	43,1	58,4	13,9	29,1	18 . 56 . 44,3		B.
	h² Sagittarii...........	15,0	29,8	44,8	59,5	14,4	29,5	19 . 26 . 44,2		B.
	α Aquilæ ....(blazing)	22,6	36,2	49,9	3,3	17,1	30,9	19 . 42 . 44,2		B.
	☽ 2 L.	12,9	28,1	43,5	59,4	15,0	30,7	19 . 47 . 46,6		B.
	σ Capricorni	28,8	43,1	57,3	11,7	26,1	40,4	20 . 9 . 54,7		B.
	Aldebaran .....(very faint, unsteady)	......	......	......	45,0	58,6	12,8	4 . 26 . 27,1	−21,06	B.
	α Orionis.... (hazy, unsteady)	50,3	4,0	17,2	30,7	44,3	58,1	5 . 46 . 11,7		B.
June 30	⊙ 1 L. } ...... (great motion)	56,8	11,1	25,7	40,4	55,1	10,1	6 . 36 . 24,7		B.
	⊙ 2 L. }	14,5	29,0	43,4	58,1	12,9	27,9	6 . 38 . 42,5		B.
	Venus 1 L. ..... (dancing)	57,6	1,9	15,4	29,9	44,0	57,9	8 . 52 . 12,1		B.
	Regulus	10,1	23,7	37,4	51,4	5,2	19,1	9 . 59 . 32,9		B.
July 1	⊙ 1 L..................	3,2	17,9	32,3	47,1	1,9	16,4	6 . 40 . 31,2		B.
	⊙ 2 L..................	21,0	35,4	50,0	4,8	19,4	34,1	6 . 42 . 49,0		B.
	Procyon .... (very hazy)	......	......	......	54,4	8,1	21,7	7 . 30 . 35,3	−20,33	B.
	(c) Venus 1 L.	4,5	17,2	31,2	45,3	59,2	13,4	8 . 52 . 27,7		B.
	Regulus	8,6	22,2	36,0	49,8	3,9	17,5	9 . 59 . 31,3		B.
	β Leonis	12,1	25,7	39,6	53,9	8,0	21,8	11 . 40 . 35,7		B.
	Polaris SP. .... (cloudy)	34.55,6	43.11,8	51.26,4	59.37,8	7.56,2	......	13 . 24 . 7,8	+2 . 44,21	B.
	Spica	5,2	18,8	32,0	46,1	59,9	13,7	13 . 16 . 27,3		B.
	Arcturus	40,9	55,4	9,4	23,9	38,2	52,8	14 . 8 . 7,3		B.
	(d) Antares	50,1	5,1	19,9	34,8	50,1	5,0	16 . 19 . 20,0		B.
	(d) α Herculis	42,1	56,0	9,6	23,6	38,1	51,9	17 . 7 . 5,8		B.
	Mars 2 L..............	43,2	57,4	11,3	25,8	40,2	54,4	3 . 39 . 8,7		B.
	(d) Aldebaran	58,8	13,3	27,1	40,9	55,1	9,4	4 . 26 . 23,3		B.
	(d) α Orionis ...... (unsteady)	46,9	0,5	14,0	27,3	41,1	54,6	5 . 46 . 8,4		B.
July 2	(e) ⊙ 1 L.	10,2	24,1	38,8	53,4	8,1	22,7	6 . 44 . 37,3		B.
	⊙ 2 L.	27,2	41,9	56,1	11,0	25,8	40,4	6 . 46 . 55,0		B.
	Procyon (very cloudy & unsteady)	......	......	......	52,7	6,1	19,7	7 . 30 . 33,1	−20,33	B.
	(d) Venus 1 L.	......	24,0	37,8	52,0	6,1	20,0	8 . 52	+ 0,03	B.
	Regulus	6,7	20,4	34,1	48,0	1,9	15,8	9 . 59 . 29,6		B.
	β Leonis .... (great motion)	10,1	24,2	37,7	52,1	5,9	19,8	11 . 40 . 33,7		B.
	Polaris SP. ..... (unsteady)	34.55,6	43.11,2	51.24,4	59.37,8	7.54,2	......	13 . 24 . 6,6	+2 . 44,33	B.
	Spica	3,4	17,0	30,4	44,3	58,0	11,7	13 . 16 . 25,6		B.
	Arcturus	38,9	53,4	7,9	22,3	36,4	51,2	14 . 8 . 5,4		B.
	α Herculis	40,3	54,2	8,4	22,1	35,9	49,8	17 . 7 . 4,2		B.
July 3	Aldebaran } . . (very unsteady)	56,1	10,0	24,1	38,0	51,9	6,3	4 . 26 . 20,2		B.
	Rigel }	5,1	19,0	32,5	46,1	59,7	13,4	5 . 6 . 27,1		B.
	α Orionis............	43,6	57,2	10,5	24,3	38,0	51,6	5 . 46 . 5,4		B.
July 4	⊙ 1 L. } ..... (much waving)	21,3	36,1	50,4	5,3	20,1	34,4	6 . 52 . 49,2		B.
	⊙ 2 L. }	38,9	53,3	8,0	22,4	37,8	52,2	6 . 55 . 7,1		B.
	Venus 1 L. . . (great motion)	55,9	9,2	23,1	37,1	51,3	5,5	8 . 52 . 19,2		B.
	Regulus .... (very faint)	......	......	30,8	45,0	58,9	12,4	9 . 59 . 26,3	−13,81	B.
	Polaris SP...... (unsteady)	34.51,8	43. 7,4	51.23,2	59.33,4	7.52,8	......	13 . 24 . 9,2	+2 . 44,22	B.
	Spica	0,2	13,8	27,1	41,0	54,6	8,7	13 . 16 . 22,1		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, July 4. 1h.

(a) Not satisfactory: too cloudy and unsteady.
(b) Confused.
(c) Very unsteady and badly defined.
(d) Cloudy in all these observations.
(e) Cloudy: very unsteady and bad to observe.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
6 . 33 . 51,44		+10,3	51,45			1,50	44,28	6 . 34 . 36,14	⊙ 2 L.
16 . 5 . 1,93			2,06	47,42	45,36			16 . 5 . 47,34	δ Ophiuchi.
17 . 6 . 27,03			27,13	12,50	45,37			17 . 7 . 12,48	α Herculis.
17 . 26 . 36,06			36,19	21,63	45,44			17 . 27 . 21,56	α Ophiuchi.
18 . 3 . 13,88			14,42					18 . 3 . 59,83	μ^1 Sagittarii.
18 . 9 . 46,29			46,95					18 . 10 . 32,37	δ Sagittarii.
18 . 55 . 58,49			59,12					18 . 56 . 44,59	τ Sagittarii.
19 . 25 . 59,60			0,20					19 . 26 . 45,70	h^2 Sagittarii.
19 . 42 . 3,46			3,64	49,03	45,39			19 . 42 . 49,15	α Aquilæ.
19 . 46 . 59,46			0,07					19 . 47 . 45,59	☽ 2 L.
20 . 9 . 11,73			12,26					20 . 9 . 57,81	σ Capricorni.
4 . 25 . 44,81			44,90	30,81	45,91	1,56	45,76	4 . 26 . 30,95	Aldebaran.
5 . 45 . 30,90			31,10	17,33	46,23			5 . 46 . 17,24	α Orionis.
6 . 35 . 40,55 6 . 37 . 58,33			49,43					6 . 37 . 35,62	⊙'s center.
8 . 51 . 29,83			29,90					8 . 52 . 16,23	Venus 1 L.
9 . 58 . 51,40			51,52	37,98	46,46			9 . 59 . 37,93	Regulus.
6 . 39 . 47,15 6 . 42 . 4,81		+9,0	55,92			1,72	47,37	6 . 41 . 43,77	⊙'s center.
7 . 29 . 54,54			54,68	42,38	47,70			7 . 30 . 42,59	Procyon.
8 . 51 . 45,50			45,52					8 . 52 . 33,53	Venus 1 L.
9 . 58 . 49,90			49,97	37,97	48,00			9 . 59 . 38,06	Regulus.
11 . 39 . 53,83	53,48		53,86	42,06	48,20			11 . 40 . 42,07	β Leonis.
12 . 59 . 36,81	48,38		2,06	50,55	48,49			1 . 0 . 50,36	Polaris SP.
13 . 15 . 46,14	45,91		46,45	34,85	48,40			13 . 16 . 34,77	Spica.
14 . 7 . 23,98	23,61		23,95	12,52	48,57			14 . 8 . 12,33	Arcturus.
16 . 18 . 35,00			35,51	24,07	48,56			16 . 19 . 24,05	Antares.
17 . 6 . 23,87			23,91	12,50	48,59			17 . 7 . 12,50	α Herculis.
3 . 38 . 25,86			25,85			1,80	49,19	3 . 39 . 15,31	Mars 2 L.
4 . 25 . 41,12			41,14	30,86	49,72			4 . 26 . 30,66	Aldebaran.
5 . 45 . 27,55			27,67	17,37	49,70			5 . 46 . 17,30	α Orionis.
6 . 43 . 53,51 6 . 46 . 11,05			2,22					6 . 45 . 51,92	⊙'s center.
7 . 29 . 52,57			52,71	42,38	49,67			7 . 30 . 42,46	Procyon.
8 . 51 . 52,01			52,03					8 . 52 . 41,89	Venus 1 L.
9 . 58 . 48,07			48,14	37,97	49,83			9 . 59 . 38,08	Regulus.
11 . 39 . 51,93	51,58		51,96	42,05	50,09			11 . 40 . 42,03	β Leonis.
12 . 59 . 35,96	47,53		1,21	51,23	50,02			1 . 0 . 51,37	Polaris SP.
13 . 15 . 44,34	44,11		44,65	34,84	50,19			13 . 16 . 34,84	Spica.
14 . 7 . 22,21	21,84		22,18	12,51	50,33			14 . 8 . 12,43	Arcturus.
17 . 6 . 22,13			22,17	12,50	50,33			17 . 7 . 12,64	α Herculis.
4 . 25 . 38,09		+9,1	38,11	30,91	52,80	1,65	52,42	4 . 26 . 30,83	Aldebaran.
5 . 5 . 46,13			46,44	39,22	52,78			5 . 6 . 39,21	Rigel.
5 . 45 . 24,37			24,50	17,40	52,90			5 . 46 . 17,32	α Orionis.
6 . 52 . 5,26 6 . 54 . 22,81			13,98					6 . 54 . 6,87	⊙'s center.
8 . 51 . 37,33			37,35					8 . 52 . 30,38	Venus 1 L.
9 . 58 . 44,87	44,54		44,94	37,96	53,02			9 . 59 . 38,05	Regulus.
12 . 59 . 33,85	45,42		59,25	52,67	53,42			1 . 0 . 52,56	Polaris SP.
13 . 15 . 41,07	40,84		41,39	34,82	53,43			13 . 16 . 34,72	Spica.

Error of Collimation = – 1″,0.

Level Error = – 4″,65. From June 30. = – 4″,93.

Meridian Error by Polaris SP. compared with β Leonis, Spica, and Arcturus on July 1 is 9″,1, and by the same stars on July 2, 8″,9. The mean 9″,0 is used from July 1.

Meridian Error by Polaris SP. compared with Regulus, Spica, and Antares, July 4. = 9″,2. The mean between this and 8″,9, the determination of July 2, is used from July 3.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
July 4	ε Bootis	12,3	27,7	42,3	57,9	13,1	28,3	14 . 37 . 43,7		B.
	α^2 Libræ	14,9	28,7	42,7	56,8	10,9	25,1	14 . 41 . 39,0		B.
	Antares..............	45,3	0,1	14,7	30,2	45,1	0,2	16 . 19 . 15,1		B.
	α Herculis	37,3	51,1	4,9	18,8	32,7	46,9	17 . 7 . 0,9		B.
July 5	(a) ⊙ 1 L.	26,9	41,3	55,9	10,9	25,2	40,1	6 . 56 . 54,9		B.
	⊙ 2 L.	44,1	58,6	13,3	28,1	42,7	57,2	6 . 59 . 12,2		B.
	(a) Procyon..............	7,1	20,7	33,9	47,8	1,4	14,6	7 . 30 . 28,2		B.
	(a) Venus 1 L............	34,3	48,1	2,0	16,0	29,9	44,0	8 . 51 . 58,1		B.
	Regulus .... (very faint)	1,9	15,6	29,0	43,1	56,9	10,7	9 . 59 . 24,5		B.
	Mars 2 L. .(faint and unsteady)	14,8	29,3	43,4	57,7	12,8	26,5	3 . 50 . 41,2		B.
	Aldebaran ..... (very cloudy)	53,1	6,9	20,4	34,2	......	......	4 . 25	+ 21,06	B.
July 6	Polaris SP. . . (very cloudy)	......	......	51.22,4	59.34,8	7.51,6	......	13 . 24 . 8,2	− 6 . 10,44	B.
	Spica	56,8	10,4	23,9	37,7	51,4	5,2	13 . 16 . 19,1		B.
	(b) Saturn's Ball 1 L......	......	25,2	39,0	52,9	6,6	19,9	13 . 49 . 33,2	− 6,79	B.
	Arcturus	32,7	46,9	1,3	15,8	30,1	44,5	14 . 7 . 58,9		B.
	Antares..............	42,1	57,1	11,5	27,0	42,0	57,1	16 . 19 . 11,8		B.
	α Herculis	34,1	47,8	1,5	15,4	29,4	43,4	17 . 6 . 57,6		B.
	☽ 2 L.	57,3	11,7	25,2	39,4	53,3	7,7	2 . 6 . 21,3		B.
	Mars 2 L. (faint, hazy, unsteady)	8,4	22,3	36,6	50,8	5,7	20,3	3 . 53 . 34,6		B.
July 7	⊙ 1 L. .... (cloudy)	37,1	51,6	6,1	20,9	35,3	50,2	7 . 5 . 5,1		B.
	⊙ 2 L.	54,1	9,0	23,2	38,0	52,9	7,5	7 . 7 . 22,1		B.
	Arcturus	31,4	45,7	59,6	14,3	28,6	43,1	14 . 7 . 57,3		B.
	Antares	40,3	55,1	10,2	25,4	40,3	55,4	16 . 19 . 10,4		B.
	α Herculis	32,5	46,1	0,2	14,3	28,1	41,9	17 . 6 . 56,0		B.
	α Ophiuchi...... (flaring)	42,0	55,6	9,2	23,1	37,0	50,8	17 . 27 . 4,8		B.
	Aldebaran	50,2	4,0	17,7	31,9	45,9	0,0	4 . 26 . 14,0		B.
	α Orionis	37,6	51,0	4,3	18,2	31,8	45,4	5 . 45 . 59,0		B.
July 8	⊙ 1 L. .... (very cloudy)	41,9	56,2	10,9	......	40,1	......	7 . 9 . 9,8	+ 5,84	B.
	⊙ 2 L.	59,0	13,3	27,7	......	......	......	7 . 10	+ 29,26	B.
	Venus 1 L.	33,2	47,0	0,9	15,0	28,6	42,8	8 . 49 . 56,9		B.
	Arcturus.............	29,8	43,9	58,2	12,5	27,1	41,4	14 . 7 . 55,8		B.
	ε Bootis..............	5,8	20,9	36,1	51,4	6,7	22,0	14 . 37 . 37,3		B.
	(c) Antares	39,1	53,8	8,9	24,1	38,9	53,8	16 . 19 . 9,1		B.
	α Herculis	30,9	44,6	58,5	12,5	26,4	40,4	17 . 6 . 54,2		B.
	☽ 2 L. .... (clouds at times)	21,0	35,7	50,4	5,2	20,1	34,7	3 . 42 . 49,3		B.
	Mars 2 L. .(very hazy and faint)	54,9	9,4	23,3	38,4	52,6	7,1	3 . 59 . 21,8		B.
	Aldebaran........ (hazy)	48,4	2,3	16,2	30,3	44,1	58,4	4 . 26 . 12,9		B.
	Rigel	57,6	11,1	24,6	38,4	51,7	5,9	5 . 6 . 19,2		B.
	α Orionis	36,1	49,2	3,0	16,5	30,1	43,8	5 . 45 . 57,4		B.
July 9	⊙ 1 L. ..... (very unsteady)	46,1	0,7	15,2	29,9	44,7	59,1	7 . 13 . 13,7		B.
	⊙ 2 L.	3,1	17,7	32,0	46,6	1,3	16,0	7 . 15 . 30,7		B.
	Regulus ..... (very cloudy)	......	......	......	37,0	51,0	4,9	9 . 59 . 18,6	− 20,75	B.
	β Leonis.............	59,0	13,0	26,8	40,9	54,8	9,1	11 . 40 . 23,0		B.
	Polaris SP.	......	43. 4,6	51.18,2	59.31,8	7.48,8	......	13 . 24 . 5,4	− 1 . 39,16	B.
	Spica .... (clouds)	......	......	......	33,1	46,8	0,9	13 . 16 . 14,4	− 20,55	B.
	Arcturus.............	28,2	42,5	56,7	11,1	25,3	39,9	14 . 7 . 54,3		B.
	Antares .... (cloudy)	......	......	7,3	22,1	37,3	51,8	16 . 19 . 7,4	− 15,00	B.
	α Herculis	29,2	43,2	57,1	11,0	24,8	39,1	17 . 6 . 52,6		B.
July 10	Mars 2 L. ... (hazy and faint)	41,6	56,1	10,2	24,7	39,3	54,2	4 . 5 . 8,3		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, July 11. 0^h.

(a) Much unsteadiness in these mid-day observations.

(b) *Very* faint: the ansæ could not be observed: $0^s,58$ is added for semidiameter to obtain the apparent Æ of the center.

(c) The clock error from this observation does not agree with the preceding and succeeding, and is therefore not used.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
14 . 36 . 57,90		+ 9,1	57,76	51,23	53,47	1,65	52,42	14 . 37 . 51,18	ϵ Bootis.
14 . 40 . 56,87			57,25	50,59	53,34			14 . 41 . 50,68	α Libræ.
16 . 18 . 30,10	29,95		30,61	24,06	53,45			16 . 19 . 24,15	Antares.
17 . 6 . 18,95			18,99	12,50	53,51			17 . 7 . 12,59	α Herculis.
6 . 56 . 10,74 6 . 58 . 28,03			19,33			1,66	54,10	6 . 58 . 13,91	☉'s center.
7 . 29 . 47,67			47,82	42,41	54,59			7 . 30 . 42,44	Procyon.
8 . 51 . 16,06			16,08					8 . 52 . 10,79	Venus 1 L.
9 . 58 . 43,10			43,17	37,96	54,79			9 . 59 . 37,96	Regulus.
3 . 49 . 57,96			57,94			1,57	55,77	3 . 50 . 53,96	Mars 2 L.
4 . 25 . 34,71			34,73	30,96	56,23			4 . 26 . 30,79	Aldebaran.
12 . 59 . 33,81			59,21	54,27	55,06			1 . 0 . 55,83	Polaris SP.
13 . 15 . 37,79			38,11	34,80	56,69			13 . 16 . 34,75	Spica.
13 . 48 . 52,68			52,99					13 . 49 . 50,24	Saturn's center.
14 . 7 . 15,74			15,72	12,46	56,74			14 . 8 . 12,41	Arcturus.
16 . 18 . 26,95			27,46	24,06	56,60			16 . 19 . 24,29	Antares.
17 . 6 . 15,60			15,64	12,50	56,86			17 . 7 . 12,53	α Herculis.
2 . 5 . 39,42			39,51			1,52	57,26	2 . 6 . 36,90	☽ 2 L.
3 . 52 . 51,24			51,22					3 . 53 . 48,73	Mars 2 L.
7 . 4 . 20,90 7 . 6 . 38,12		+ 8,9	29,45					7 . 6 . 27,16	☉'s center.
14 . 7 . 14,28			14,25	12,45	58,20			14 . 8 . 12,40	Arcturus.
16 . 18 . 25,30			25,80	24,06	58,26			16 . 19 . 24,09	Antares.
17 . 6 . 14,16			14,19	12,50	58,31			17 . 7 . 12,53	α Herculis.
17 . 26 . 23,21			23,27	21,65	58,38			17 . 27 . 21,64	α Ophiuchi.
4 . 25 . 31,96			31,97	31,01	59,04	1,56	58,84	4 . 26 . 31,10	Aldebaran.
5 . 45 . 18,19			18,31	17,47	59,16			5 . 46 . 17,53	α Orionis.
7 . 8 . 25,62 7 . 10 . 42,59			34,05					7 . 10 . 33,36	☉'s center.
8 . 49 . 14,91			14,94					8 . 50 . 14,35	Venus 1 L.
14 . 7 . 12,67			12,64	12,44	59,80			14 . 8 . 12,40	Arcturus.
14 . 36 . 51,45			51,31	51,18	59,87			14 . 37 . 51,10	ϵ Bootis.
16 . 18 . 24,08			24,58	24,06	59,48			16 . 19 . 24,48	Antares.
17 . 6 . 12,50			12,53	12,50	59,97			17 . 7 . 12,49	α Herculis.
3 . 42 . 5,20			5,17			1,54	60,35	3 . 43 . 5,76	☽ 2 L.
3 . 58 . 38,22			38,19					3 . 59 . 38,80	Mars 2 L.
4 . 25 . 30,37			30,38	31,03	60,65			4 . 26 . 31,01	Aldebaran.
5 . 5 . 38,36			38,65	39,33	60,68			5 . 6 . 39,33	Rigel.
5 . 45 . 16,59			16,71	17,49	60,78			5 . 46 . 17,43	α Orionis.
7 . 12 . 29,92 7 . 14 . 46,77			38,29					7 . 14 . 39,10	☉'s center.
9 . 58 . 37,12	36,79		37,18	37,95	60,77			9 . 59 . 38,17	Regulus.
11 . 39 . 40,94	40,59		40,96	41,99	61,03			11 . 40 . 42,06	β Leonis.
12 . 59 . 30,60	42,24		55,77	56,88	61,11			1 . 0 . 56,95	Polaris SP.
13 . 15 . 33,25	33,02		33,55	34,77	61,22			13 . 16 . 34,75	Spica.
14 . 7 . 11,14	10,77		11,11	12,43	61,32			14 . 8 . 12,37	Arcturus.
16 . 18 . 22,18	22,03		22,68	24,06	61,38			16 . 19 . 24,07	Antares.
17 . 6 . 11,00			11,03	12,50	61,47			17 . 7 . 12,48	α Herculis.
4 . 4 . 24,91			24,88			1,60	63,61	4 . 5 . 28,76	Mars 2 L.

Error of Collimation = − 1″,0.

Level Error = − 4″,93. From July 7. = − 4″,97.

The Meridian Error by Polaris SP. compared with Regulus, β Leonis, Spica, Arcturus, and Antares on July 9 is 8″9, and by Polaris SP. with β Leonis and Arcturus on July 11, the determination is the same. This is used from July 7 to July 15.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
July 10	Rigel	54,2	7,9	21,3	35,0	48,7	2,3	5. 6.16,1		B.
	α Orionis.... (very unsteady)	32,7	46,1	59,8	13,5	26,9	40,6	5.45.54,1		B.
July 11	⊙ 1 L. } (ill defined and unsteady)	53,2	7,7	21,9	36,7	51,1	6,0	7.21.20,5		B.
	⊙ 2 L. }	10,0	24,3	38,7	53,4	8,1	22,9	7.23.37,4		B.
	Venus 1 L. (unsteady, cloudy)	6,9	20,8	34,4	48,3	......	16,4	8.46.30,3	+ 2,32	B.
	β Leonis..... (very unsteady)	55,8	9,6	23,3	37,2	51,4	5,6	11.40.19,4		B.
	Polaris SP....	......	......	......	59.29,6	7.48,2	15.52,8	13.24. 4,4	- 12.19,85	B.
	Arcturus	24,9	39,2	53,3	8,0	22,2	36,5	14. 7.51,1		B.
	Antares	34,1	49,0	3,7	18,8	33,6	48,7	16.19. 4,2		B.
	α Herculis .... (flaring)	26,2	40,1	53,9	8,1	21,6	35,6	17. 6.49,5		B.
July 12	(a) Regulus	......	......	......	32,1	46,0	59,8	9.59.13,7	- 20,75	B.
	(a) Mars 2 L..............	......	......	......	......	26,7	40,8	4.10.55,3	- 28,90	B.
	(a) Aldebaran	42,1	......	10,1	24,2	37,9	52,3	4.26. 6,3	- 4,67	B.
July 13	(a) ⊙ 1 L................	58,6	13,3	27,5	42,2	57,1	11,4	7.29.26,1		B.
	⊙ 2 L................	15,1	30,0	44,0	59,0	13,5	28,1	7.31.42,5		B.
	Venus 1 L. .. (great motion)	4,0	17,7	31,3	45,2	59,1	13,3	8.43.27,4		B.
July 15	(a) Mars 2 L. } .... (unsteady)	......	24,5	39,2	53,2	7,7	22,8	4.19.....	+ 0,03	B.
	(a) Aldebaran }	38,2	52,2	......	......	......	......	4.26. 1,7	+ 9,31	B.
	α Orionis	26,1	39,5	53,0	6,7	20,0	33,8	5.45.47,4		B.
July 16	(a) Venus 1 L.	......	41,1	54,8	8,8	22,4	36,6	8.38.50,5	- 6,90	B.
	☽ 1 L....... (extremely faint)	38,5	53,0	7,2	21,9	36,2	50,7	9.53. 5,3		B.
	(a) Regulus..............	......	......	13,0	26,8	40,7	54,3	10. 0. 8,2	- 13,81	B.
	(a) β Leonis	......	......	......	31,1	44,8	58,7	11.41.12,9	- 21,00	B.
	Arcturus.............	18,1	32,3	46,4	1,1	15,3	29,7	14. 8.44,1		B.
	ϵ Bootis	54,1	9,4	24,3	39,7	54,9	10,4	14.38.25,5		B.
	(a) α^2 Libræ	57,0	11,1	24,7	38,9	52,8	6,9	14.42.20,9		B.
July 17	Mars 2 L......... (cloudy)	57,4	12,3	26,4	41,3	55,6	10,3	4.26.24,8		B.
	Rigel	45,2	58,7	12,3	26,1	39,8	53,2	5. 7. 6,9		B.
	β Tauri........ (very cloudy)	......	......	......	42,6	57,9	13,6	5.16.....	- 15,32	B.
	α Orionis....... (unsteady)	23,5	37,1	50,4	4,2	17,9	31,4	5.46.44,9		B.
July 18	(b) Venus 1 L.	6,2	20,1	34,0	47,8	2,0	15,8	8.34.29,4		B.
	☽ 1 L. .... (hazy)	3,8	17,2	30,9	45,1	58,8	13,0	11.29.26,4		B.
	Polaris SP. .... (very cloudy)	35.41,4	43.57,8	......	......	8.44,4	......	13.24.58,2	+ 2. 3,32	B.
	Spica	39,7	53,2	6,7	20,7	34,1	48,0	13.17. 1,8		B.
	Arcturus	15,4	29,9	44,4	58,5	12,9	27,3	14. 8.41,7		B.
	ϵ Bootis	51,7	7,1	21,9	37,4	52,6	7,9	14.38.23,2		B.
	Antares ....(flaring)	24,9	39,8	54,4	9,8	24,9	39,6	16.19.54,5		B.
	α Herculis...... (ill defined)	17,2	30,8	44,3	58,3	12,4	26,2	17. 7.40,4		B.
	α Ophiuchi	26,7	40,2	53,9	8,0	21,4	35,3	17.27.49,4		B.
July 20	Arcturus .... (clouds)	13,4	28,0	......	56,4	10,3	25,0	14. 8.39,4	- 2,42	C.
	β Libræ	16,0	29,4	43,0	56,7	10,3	24,0	15. 8.37,2		C.
	(c) α Coronæ Borealis. ...	45,3	59,9	15,2	30,4	45,8	0,9	15.28.16,0		C.
	(d) α Serpentis	......	30,2	43,4	57,5	10,7	24,4	15.36.37,8	- 6,77	C.
	ζ Ursæ Minoris .. (clouds)	46.37,0	47.42,4	......	49.55,5	......	......	15.53.15,3	+ 33,05	C.
	δ Ophiuchi	50,6	4,0	17,4	31,3	44,7	58,2	16. 6.11,5		C.
	Antares...............	22,4	37,5	52,3	7,2	22,2	37,3	16.19.52,4		C.
	γ Aquilæ	33,0	46,4	0,0	13,7	27,7	41,4	19.38.55,1		C.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, July 18. 0^h. After α Orionis July 15, the clock was put forward 1^m.

(*a*) Cloudy in all these observations.
(*b*) Unsteady and very cloudy and faint.
(*c*) Wire VI. was set down 59,9, evidently by a mistake of 1^s.
(*d*) Doubtful observation.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
5 . 5 . 35,07		+ 8,9	35,36	39,37	64,01	1,60	63,61	5 . 6 . 39,31	Rigel.
5 . 45 . 13,38			13,50	17,53	64,03			5 . 46 . 17,50	α Orionis.
7 . 20 . 36,73			45,08					7 . 22 . 49,18	☉'s center.
7 . 22 . 53,54									
8 . 45 . 48,50			48,53					8 . 46 . 52,73	Venus 1 L.
11 . 39 . 37,47	37,12		37,49	41,98	64,49			11 . 40 . 41,88	β Leonis.
12 . 59 . 28,90	40,54		54,07	58,57	64,50			1 . 0 . 58,55	Polaris SP.
14 . 7 . 7,89	7,52		7,86	12,41	64,55			14 . 8 . 12,41	Arcturus.
16 . 18 . 18,87			19,37	24,05	64,68			16 . 19 . 24,07	Antares.
17 . 6 . 7,86			7,89	12,49	64,60			17 . 7 . 12,64	α Herculis.
9 . 58 . 32,15			32,21	37,95	65,74	1,46	65,19	9 . 59 . 38,01	Regulus.
4 . 10 . 12,03			11,99				66,65	4 . 11 . 18,90	Mars 2 L.
4 . 25 . 24,15			24,16	31,14	66,98			4 . 26 . 31,08	Aldebaran.
7 . 28 . 42,31			50,55					7 . 30 . 57,66	☉'s center.
7 . 30 . 58,89									
8 . 42 . 45,43			45,47					8 . 43 . 52,65	Venus 1 L.
4 . 18 . 53,51		+ 9,7	53,47			1,23	70,63	4 . 20 . 4,32	Mars 2 L.
4 . 25 . 20,01			20,03	31,23	71,20			4 . 26 . 30,89	Aldebaran.
5 . 45 . 6,64			6,78	17,64	70,86			5 . 46 . 17,70	α Orionis.
8 . 38 . 8,80			8,86				10,63	8 . 38 . 19,93	Venus 1 L.
9 . 52 . 21,83			21,83					9 . 52 . 32,96	☽ 1 L.
9 . 59 . 26,79			26,86	37,94	11,08			9 . 59 . 38,00	Regulus.
11 . 40 . 30,87			30,90	41,94	11,04			11 . 40 . 42,13	β Leonis.
14 . 8 . 1,00			0,97	12,35	11,38			14 . 8 . 12,32	Arcturus.
14 . 37 . 39,76			39,60	51,09	11,49			14 . 37 . 50,98	ε Bootis.
14 . 41 . 38,90			39,30	50,50	11,20			14 . 41 . 50,68	α^2 Libræ.
4 . 25 . 41,15		+ 10,4	41,13			1,16	13,00	4 . 25 . 54,34	Mars 2 L.
5 . 6 . 26,03			26,39	39,53	13,14			5 . 6 . 39,64	Rigel.
5 . 15 . 42,71			42,57	55,88	13,31			5 . 15 . 55,83	β Tauri.
5 . 46 . 4,20			4,37	17,68	13,31			5 . 46 . 17,65	α Orionis.
8 . 33 . 47,90			47,99					8 , 34 . 1,41	Venus 1 L.
11 . 28 . 45,03			45,20					11 . 28 . 58,75	☽ 1 L.
13 . 0 . 23,77	34,15		49,96	3,58	13,62			1 . 1 . 3,59	Polaris SP.
13 . 16 . 20,60	20,36		20,98	34,68	13,70			13 . 16 . 34,62	Spica.
14 . 7 . 58,59	58,19		58,59	12,33	13,74			14 . 8 . 12,27	Arcturus.
14 . 37 . 37,40	36,94		37,26	51,06	13,80			14 . 37 . 50,97	ε Bootis.
16 . 19 . 9,70	9,54		10,30	24,01	13,71			16 . 19 . 24,09	Antares.
17 . 6 . 58,52			58,59	12,47	13,88			17 . 7 . 12,42	α Herculis.
17 . 27 . 7,85			7,95	21,64	13,69			17 . 27 . 21,79	α Ophiuchi.
14 . 7 . 56,33		+ 11,2	56,36	12,31	15,95	1,05	15,35	14 . 8 . 12,33	Arcturus.
15 . 7 . 56,66			57,07					15 . 8 . 13,08	β Libræ.
15 . 27 . 30,50	30,05		30,41	46,57	16,16			15 . 27 . 46,43	α Coronæ Bor.
15 . 35 . 57,23	56,90		57,44	13,39	15,95			15 . 36 . 13,47	α Serpentis.
15 . 49 . 55,60	53,65		52,03	8,37	16,34			15 . 50 . 8,07	ζ Ursæ Minoris.
16 . 5 . 31,10	30,74		31,23	47,33	16,10			16 . 5 . 47,28	δ Ophiuchi.
16 . 19 . 7,33	7,17		7,99	23,99	16,00			16 . 19 . 24,06	Antares.
19 . 38 . 13,90			14,07					19 . 38 . 30,28	γ Aquilæ.

Error of Collimation = – 1″,0.

Level Error – = 4″,97. From July 15. = – 5″,45.

The Meridian Error adopted from July 15 is the mean of the last determination and that of July 18.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
July 20	β Aquilæ	20,8	34,3	47,7	1,6	15,2	28,6	19 . 47 . 42,2		C.
	Uranus	13,0	26,5	40,0	53,8	7,7	21,4	22 . 24 . 35,1		C.
July 21	(a) ⊙ 1 L................	......	......	......	......	......	16,0	8 . 2 . 30,4	– 36,09	C.
	⊙ 2 L................	18,7	33,2	47,3	1,9	16,4	30,8	8 . 4 . 45,5		C.
	(b) δ Ursæ Minoris	14. 3,3	17.49,6	21.33,4	25.21,8	29. 8,4	32.56,5	18	+ 1 . 53,45	C.
	ζ Aquilæ	55,8	9,8	23,5	37,4	51,3	5,2	18 . 58 . 19,0		C.
	(c) δ Aquilæ	18,4	32,0	......	58,8	12,2	25,7	19 . 17 . 39,2	– 2,27	C.
	α Aquilæ	51,2	4,8	18,2	32,0	45,4	59,0	19 . 43 . 12,6		C.
	β Aquilæ............	20,0	33,5	46,9	0,5	14,0	27,6	19 . 47 . 41,2		C.
	(d) α^2 Capricorni	0,5	......	28,0	41,8	56,0	9,6	20 . 9 . 23,7	– 4,61	C.
July 22	α Ophiuchi............	22,0	35,8	49,3	3,3	16,9	30,9	17 . 27 . 44,7		C.
	δ Ursæ Minoris .. (clouds)	14. 1,8	......	21.31,5	25.20,8	29. 6,5	......	18	+ 2 . 50,25	C.
	(e) Mars 2 L.............	26,3	40,6	54,8	9,7	23,9	38,6	4 . 40 . 53,3		C.
	(f) β Tauri...............	51,4	6,3	21,5	36,7	52,4	7,9	5 . 16 . 23,3		C.
	(g) α Orionis............	17,9	31,6	45,5	58,8	12,2	25,9	5 . 46 . 39,4		C.
July 23	⊙ 2 L. ... (hurried, cloudy)	14,3	28,5	42,8	......	11,7	26,2	8 . 12 . 40,4		C.
	Venus 1 L. ...... (clouds)	......	......	11,4	25,3	39,2	53,0	8 . 21 . 6,9	– 13,81	C.
	Arcturus.............	9,9	24,3	38,6	53,0	7,3	21,7	14 . 8 . 35,9		C.
	δ Ophiuchi	47,3	0,7	14,2	27,8	41,2	54,7	16 . 6 . 8,3		C.
	α Ophiuchi	20,7	34,6	48,2	2,3	15,9	30,0	17 . 27 . 43,7		C.
	β Lyræ...............	56,4	12,3	28,2	44,9	0,7	17,0	18 . 44 . 32,9		C.
	ζ Aquilæ.............	53,8	7,3	21,1	35,1	49,0	3,0	18 . 58 . 17,0		C.
	α Aquilæ	48,9	2,4	16,0	29,7	43,1	56,8	19 . 43 . 10,5		C.
July 24	(h) Antares..............	17,9	33,0	47,7	2,9	18,0	32,9	16 . 19 . 47,8		C.
July 25	(i) β Tauri .... (clouds)	......	......	......	......	......	4,3	5 . 16 . 19,4	– 38,35	C.
	Mercury 2 L.. (cloudy and unsteady)	15,3	......	44,4	59,0	13,3	28,0	7 . 7 . 42,8	– 4,87	C.
	Castor	57,4	13,3	28,9	45,0	0,7	16,8	7 . 24 . 32,8		C.
July 26	Arcturus	6,3	20,7	34,8	49,2	3,6	18,0	14 . 8 . 32,4		C.
	ε Bootis	42,7	57,3	12,8	27,9	43,4	58,6	14 . 38 . 13,8		C.
	β Libræ .... (cloudy)	......	......	......	49,6	3,3	17,0	15 . 8 . 30,7	– 20,47	C.
July 27	(j) ⊙ 2 L.	......	......	......	40,2	54,5	8,8	8 . 28 . 23,4	– 21,48	C.
	α Serpentis	8,3	21,8	35,2	48,9	2,6	16,2	15 . 36 . 29,9		C.
	ζ Ursæ Minoris.......	46.27,2	47.33,0	48.38,7	49.45,5	50.52,0	51.58,4	15 . 53 . 5,3		C.
	δ Ophiuchi	42,3	55,8	9,2	22,8	36,2	49,8	16 . 6 . 3,2		C.
	(k) Antares	14,4	29,2	44,0	59,0	13,9	29,0	16 . 19 . 44,0		C.
	α Aquilæ.............	44,0	57,6	10,9	24,4	38,0	51,9	19 . 43 . 5,5		C.
	59 Sagittarii. .. (hurried)	......	......	......	30,6	45,7	0,9	19 . 47 . 15,9	– 22,81	C.
	c Sagittarii............	26,0	41,3	56,2	11,7	27,0	42,4	19 . 52 . 57,7		C.
	(l) α^2 Capricorni	53,4	7,3	21,0	34,9	48,8	2,6	20 . 9 . 16,5		C.
	☽ 1 L. .... (waving motion)	55,8	11,3	26,4	41,8	57,5	12,9	20 . 18 . 28,4		C.
	(m) ☽ 2 L.	29,0	44,2	59,8	15,2	30,4	46,0	20 . 21 . 1,7		C.
	(n) ψ Capricorni	15,4	30,3	45,4	0,6	15,2	30,5	20 . 36 . 45,0		C.
	(n) η Capricorni..........	58,5	12,4	26,6	41,4	55,8	10,4	20 . 55 . 24,7		C.
	Pallas......... (very faint)	12,5	26,4	39,8	54,2	7,7	21,8	21 . 14 . 35,3		C.
	α Aquarii	18,9	32,2	45,6	59,3	12,5	26,3	21 . 57 . 39,7		C.
	Uranus	14,8	28,0	41,4	55,7	9,1	22,8	22 . 23 . 36,7		C.
	(h) β Tauri ..... (faint and hazy)	......	......	......	......	46,3	1,6	5 . 16 . 17,0	– 30,67	C.
	(h) α Orionis	12,1	25,6	39,0	52,6	6,3	19,8	5 . 46 . 33,5		C.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, July 25. 1^h.

(*a*) The observation of 1 L. hurried and scarcely worth recording. (*b*) Cloudy at 6th wire. (*c*) Wire III. omitted as very doubtful. (*d*) Wire II. not observed. (*e*) Indistinct: perhaps wrong limb taken. (*f*) Unsatisfactory. (*g*) An error of 1^s in counting was discovered by looking at the clock face after the third wire. (*h*) Not used for clock rate. (*i*) Used for clock rate. (*j*) Cloudy and difficult to observe. (*k*) The counting being 1^s wrong on looking at the clock, the two last wires were increased 1^s. (*l*) Wire VI. was put down 1,6, and is altered conjecturally. (*m*) Not good: the limb ragged. Correction applied for defect of illumination $= 0^s,06$. (*n*) Neither of these observations good. The counting of the second observation being 1^s wrong, the five last wires are increased 1^s.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
19 . 47 . 1,49		+ 11,2	1,70			1,05	15,35	19 . 47 . 17,92	β Aquilæ.
22 . 23 . 53,93			54,37					22 . 24 . 10,70	Uranus.
8 . 1 . 47,11 8 . 4 . 1,97			} 54,59			1,06	16,30	8 . 3 . 11,24	⊙'s center.
18 . 25 . 22,28	16,44		9,36	25,56	16,20			18 . 25 . 26,47	δ Ursæ Minoris.
18 . 57 . 37,43			37,56					18 . 57 . 54,70	ζ Aquilæ.
19 . 16 . 58,78			59,06					19 . 17 . 16,21	δ Aquilæ.
19 . 42 . 31,88	31,56		32,09	49,30	17,21			19 . 42 . 49,26	α Aquilæ.
19 . 47 . 0,53			0,76					19 . 47 . 17,93	β Aquilæ.
20 . 8 . 41,99	41,77		42,45	59,60	17,15			20 . 8 . 59,64	α^2 Capricorni.
17 . 27 . 3,27	2,93		3,42	21,62	18,20	1,18	17,34	17 . 27 . 21,62	α Ophiuchi.
18 . 25 . 20,40	14,56		7,48	25,35	17,87			18 . 25 . 25,73	δ Ursæ Minoris.
4 . 40 . 9,60			9,62			1,25	18,53	4 . 40 . 28,39	Mars 2 L.
5 . 15 . 37,07	36,64		36,99	56,02	19,03			5 . 15 . 55,80	β Tauri.
5 . 45 . 58,76	58,44		58,98	17,80	18,82			5 . 46 . 17,81	α Orionis.
8 . 11 . 57,32			57,37					8 . 12 . 16,33	⊙ 2 L.
8 . 20 . 25,35			25,50					8 . 20 . 44,46	Venus 1 L.
14 . 7 . 52,95			53,00	12,27	19,27			14 . 8 . 12,27	Arcturus.
16 . 5 . 27,75			27,90	47,30	19,40			16 . 5 . 47,27	δ Ophiuchi.
17 . 27 . 2,20			2,35	21,62	19,27			17 . 27 . 21,79	α Ophiuchi.
18 . 43 . 44,63			44,46					18 . 44 . 3,97	β Lyræ.
18 . 57 . 35,19			35,32					18 . 57 . 54,85	ζ Aquilæ.
19 . 42 . 29,63			29,84	49,31	19,47			19 . 42 . 49,40	α Aquilæ.
16 . 19 . 2,88			3,54	23,96	20,42		19,78	16 . 19 . 24,17	Antares.
5 . 15 . 33,50			33,42	56,11	22,69	1,26	22,36	5 . 15 . 56,06	β Tauri.
7 . 6 . 58,93			58,95					7 . 7 . 21,68	Mercury 2 L.
7 . 23 . 44,99			44,83	7,56	22,73			7 . 24 . 7,58	Castor.
14 . 7 . 49,29		+ 6,6	49,16	12,23	23,07			14 . 8 . 12,26	Arcturus.
14 . 37 . 28,07			27,84	50,94	23,10			14 . 37 . 50,97	ε Bootis.
15 7 . 49,68			49,83					15 . 8 . 12,98	β Libræ.
8 . 27 . 40,25			40,14			1,30	23,57	8 . 28 . 4,17	⊙ 2 L.
15 . 35 . 48,99	48,68		49,00	13,32	24,32			15 . 36 . 13,41	α Serpentis.
15 . 49 . 45,73	43,88		42,92	7,67	24,75			15 . 50 . 7,35	ζ Ursæ Minoris.
16 . 5 . 22,75	22,41		22,70	47,27	24,57			16 . 5 . 47,14	δ Ophiuchi.
16 . 18 . 59,07	58,91		59,39	23,94	24,55			16 . 19 . 23,84	Antares.
19 . 42 . 24,61			24,60	49,34	24,74			19 . 42 . 49,24	α Aquilæ.
19 . 46 . 30,47			30,81					19 . 46 . 55,45	59 Sagittarii.
19 . 52 . 11,75			12,09					19 . 52 . 36,74	c Sagittarii.
20 . 8 . 34,93			35,11	59,66	24,55			20 . 8 . 59,77	α^2 Capricorni.
20 . 17 . 42,01			42,34					20 . 18 . 7,01	☽ 1 L.
20 . 20 . 15,19			15,52					20 . 20 . 40,25	☽ 2 L.
20 . 36 . 0,34			0,66					20 . 36 . 25,35	ψ Capricorni.
20 . 54 . 41,40			41,68					20 . 55 . 6,38	η Capricorni.
21 . 13 . 53,96			53,89					21 . 14 . 18,61	Pallas.
21 . 56 . 59,22			59,31	23,96	24,65			21 . 57 . 24,07	α Aquarii.
22 . 22 . 55,70			55,87					22 . 23 . 20,65	Uranus.
5 . 15 . 30,96			30,73	56,17	25,44		24,87	5 . 15 . 55,89	β Tauri.
5 . 45 . 52,70			52,70	17,92	25,22			5 . 46 . 17,88	α Orionis.

Error of Collimation = − 1″,0.

Level Error = − 5″,45. From July 21. = − 5″,11.

Meridian Error from July 17 by Polaris SP. and accompanying stars July 18, allowing $0^s,08$ for clock rate. The Meridian Error by ζ Ursæ Minoris and accompanying stars July 20. = 9″,7; by δ Ursæ Minoris and accompanying stars on July 21. = 12″,5, and on July 22. = 12″,0, allowing $0^s,31$ for rate. The mean of these three and the preceding is 11″,2, which is used from July 20. (See Introduction.)

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
July 28	⊙ 1 L. } ..... (very unsteady)	37,5	51,9	6,2	20,6	34,8	49,2	8 . 30 . 2,9		C.
	⊙ 2 L. }	51,3	5,8	19,9	34,4	48,7	3,0	8 . 32 . 17,3		C.
July 29	(a) ⊙ 1 L. } .. (clouds with sudden changes)	......	45,5	59,7	14,4	......	......	8 . 33 . 56,9	+ 0,03	C.
	⊙ 2 L. }	45,1	59,4	......	27,4	42,2	......	8 . 36	+ 14,24	C.
	(b) α Aquarii............	16,0	29,2	42,8	56,5	9,8	......	21 . 57	+ 13,49	C.
	Venus 2 L. ......(cloudy)	37,7	51,4	5,0	18,8	32,9	46,4	8 . 4 . 0,6		C.
July 30	Arcturus......... (clouds)	1,0	15,2	29,6	44,0	58,3	......	14 . 8	+ 14,37	C.
	β Ursæ Minoris	48.17,4	49. 8,2	49.59,2	50.51,4	51.43,0	52.34,4	14 . 53 . 26,0		C.
	β Libræ (faint and very cloudy)	......	......	......	44,4	58,0	11,8	15 . 8 . 25,3	− 20,47	C.
	α Coronæ Borealis	33,0	47,9	2,8	18,2	33,2	48,6	15 . 28 . 3,8		C.
	(c) α Serpentis	4,4	18,0	30,9	44,8	58,8	11,9	15 . 36 . 25,8		C.
	ζ Ursæ Minoris.......	46.22,9	47.29,2	48.34,5	49.41,9	50.48,3	......	15 . 53 . 1,3	+ 22,17	C.
	δ Ophiuchi	38,3	51,8	5,0	18,8	32,3	45,8	16 . 5 . 59,4		C.
	(d) α Aquilæ............	40,0	53,4	7,0	20,8	34,5	48,0	19 . 43 . 1,7		C.
	(e) c Sagittarii............	22,0	37,3	52,2	7,6	23,2	38,7	19 . 52 . 54,0		C.
	(f) α^2 Capricorni.........	......	3,4	17,0	31,0	45,0	58,9	20 . 9 . 12,8	− 6,90	C.
	ψ Capricorni..........	11,6	26,3	41,0	56,2	11,4	26,4	20 . 36 . 41,6		C.
	η Capricorni . (much motion)	......	......	23,0	37,3	51,9	6,5	20 . 55 . 21,0	− 14,36	C.
	Pallas .... (very faint)	55,3	8,7	21,8	36,7	50,2	4,7	21 . 12 . 18,2		C.
	β Aquarii............	48,7	2,0	15,2	29,0	42,7	56,2	21 . 23 . 9,6		C.
	α Aquarii............	15,0	28,6	41,8	55,0	8,3	22,3	21 . 57 . 35,5		C.
	(g) Uranus	47,7	......	14,8	28,3	42,3	56,0	22 . 23 . 9,8	− 4,58	C.
Aug. 1	α Aquilæ............	37,6	51,1	4,7	18,3	32,0	45,6	19 . 42 . 59,0		C.
	(h) α^2 Capricorni.........	47,2	1,0	14,8	28,8	42,4	56,0	20 . 9 . 10,0		C.
	(i) β Aquarii............	46,0	59,6	12,8	26,4	40,0	53,7	21 . 23 . 7,0		C.
	α Aquarii............	12,3	25,6	39,0	52,6	6,0	19,6	21 . 57 . 33,0		C.
	(j) Uranus	29,0	42,7	56,2	10,2	23,8	37,6	22 . 22 . 51,3		C.
	β Tauri .... (indistinct)	......	......	9,2	24,9	40,2	55,5	5 . 15	− 7,62	C.
	α Orionis.... (much motion)	5,8	19,4	32,7	46,5	0,0	13,4	5 . 46 . 27,3		C.
Aug. 2	Arcturus............	57,6	11,8	26,0	40,5	54,9	9,3	14 . 8 . 23,5		C.
	ε Bootis..............	33,6	48,8	3,8	19,0	34,3	49,5	14 . 38 . 4,8		C.
	α Coronæ Borealis	29,3	44,4	59,3	14,7	29,9	45,0	15 . 28 . 0,3		C.
	α Serpentis	1,0	14,5	27,7	41,4	55,0	8,7	15 . 36 . 22,2		C.
	ζ Ursæ Minoris.......	......	......	48.30,4	49.37,5	50.44,0	51.51,2	15 . 52 . 57,3	− 1 . 6,35	C.
	δ Ophiuchi	34,9	48,3	1,4	15,2	28,4	42,1	16 . 5 . 55,5		G.
	(k) Antares..............	6,7	21,7	36,3	51,3	6,8	21,6	16 . 19 . 36,7		G.
	α Herculis	58,9	12,8	26,4	40,5	54,3	8,6	17 . 7 . 22,2		G.
	α Ophiuchi	8,3	22,2	35,8	49,6	3,6	17,1	17 . 27 . 31,1		G.
	δ Ursæ Minoris.......	......	17.27,8	21.11,4	25. 0,7	28.46,8	32.35,0	18 . 36 . 22,2	− 1 . 53,06	C.
	Mars 2 L. ... (very cloudy)	8,1	......	......	52,3	6,7	......	5 . 12 . 36,0	− 3,70	C.
	Venus 2 L.	37,2	50,9	4,5	18,6	32,3	46,0	7 . 55 . 0,0		C.
Aug. 3	⊙ 1 L.	52,2	6,7	20,4	34,8	48,8	2,9	8 . 53 . 17,0		C.
	⊙ 2 L.	5,0	18,9	33,0	47,4	1,5	15,8	8 . 55 . 30,2		C.
	α^2 Capricorni.....(cloudy)	......	58,2	12,0	26,0	40,0	53,8	20 . 9 . 7,8	− 6,90	C.
	(l) ✱ 7 or 8 Mag. N.P.D. 76°.45′..	......	3,8	17,5	31,0	45,0	58,7	21 . 9	+ 0,03	C.
	β Aquarii............	43,5	57,3	10,5	24,0	37,7	51,3	21 . 23 . 5,0		C.
	α Aquarii............	10,0	23,4	36,8	50,5	3,9	17,6	21 . 57 . 31,0		C.
	Uranus ...... (very cloudy)	10,2	......	37,9	51,8	5,5	19,3	22 . 22 . 32,8	− 4,58	C.
	(m) Mars 2 L.............	0,3	14,9	29,2	44,2	58,9	13,3	5 . 15 . 28,0		C.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, August 1. 1^h.

(a) A difficult observation. Wires IV. and V. of 2 L. are increased 1^s, the counting being found wrong. (b) Very cloudy: not used for clock rate. (c) Confused; the third wire was put down 29,9. (d) All the wires have been altered 1^s. (e) Irregular horizontal motion. (f) Confused at the 1st wire: not good. (g) The second wire was put down 1,9, probably by mistake for 1,1: it is therefore omitted. (h) The 3rd wire has been increased 1^s. (i) Confused. (j) The counting being found 1^s too little, the five last wires have been increased 1^s. (k) The intervals not good: the star appeared to move irregularly. (l) This star was taken by mistake for Pallas: the planet was observed at the seventh wire at 10,5, and consequently preceded the star by about 2^s. (m) Wire V. was written down 59,9, evidently by a mistake of 1^s.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
8 . 29 . 20,44		+ 6,6	27,29			1,30	24,87	8 . 30 . 52,62	⊙'s center.
8 . 31 . 34,34									
8 . 33 . 14,16			20,87				26,17	8 . 34 . 47,50	⊙'s center.
8 . 35 . 27,77									
21 . 56 . 56,35			56,45	24,00	27,55			21 . 57 . 23,81	α Aquarii.
8 . 3 . 18,98			18,94			1,26	27,54	8 . 3 . 46,90	Venus 2 L.
14 . 7 . 43,99			43,88	12,18	28,30			14 . 8 . 12,16	Arcturus.
14 . 50 . 51,37			50,60					14 . 51 . 18,92	β Ursæ Minoris.
15 . 7 . 44,41			44,57					15 . 8 . 12,91	β Libræ.
15 . 27 . 18,22	17,81		18,02	46,42	28,40			15 . 27 . 46,37	α Coronæ Bor.
15 . 35 . 44,94	44,64		44,96	13,29	28,33			15 . 36 . 13,32	α Serpentis.
15 . 49 . 41,85	40,08		39,12	7,36	28,24			15 . 50 . 7,49	ζ Ursæ Minoris.
16 . 5 . 18,77	18,44		18,73	47,24	28,51			16 . 5 . 47,11	δ Ophiuchi.
19 . 42 . 20,77			20,77	49,35	28,58			19 . 42 . 49,35	α Aquilæ.
19 . 52 . 7,86			8,22					19 . 52 . 36,81	c Sagittarii.
20 . 8 . 31,12			31,31	59,69	28,38			20 . 8 . 59,91	α^2 Capricorni.
20 . 35 . 56,36			56,69					20 . 36 . 25,31	ψ Capricorni.
20 . 54 . 37,58			37,85					20 . 55 . 6,48	η Capricorni.
21 . 11 . 36,52			36,47					21 . 12 . 5,12	Pallas.
21 . 22 . 29,06			29,20	57,87	28,67			21 . 22 . 57,86	β Aquarii.
21 . 56 . 55,21			55,31	24,02	28,71			21 . 57 . 24,00	α Aquarii.
22 . 22 . 28,57			28,75					22 . 22 . 57,46	Uranus.
19 . 42 . 18,33			18,33	49,36	31,03	1,06	30,22	19 . 42 . 49,42	α Aquilæ.
20 . 8 . 28,60			28,79	59,70	30,91			20 . 8 . 59,90	α^2 Capricorni.
21 . 22 . 26,50			26,64	57,90	31,26			21 . 22 . 57,80	β Aquarii.
21 . 56 . 52,58			52,68	24,05	31,37			21 . 57 . 23,87	α Aquarii.
22 . 22 . 10,11			10,29					22 . 22 . 41,50	Uranus.
5 . 15 . 24,83			24,62	56,33	31,71	1,10	31,22	5 . 15 . 56,08	β Tauri.
5 . 45 . 46,44			46,46	18,05	31,59			5 . 46 . 17,95	α Orionis.
14 . 7 . 40,51			40,40	12,13	31,73			14 . 8 . 12,27	Arcturus.
14 . 37 . 19,12			18,91	50,84	31,93			14 . 37 . 50,80	ε Bootis.
15 . 27 . 14,70			14,50	46,38	31,88			15 . 27 . 46,43	α Coronæ Bor.
15 . 35 . 41,50	41,20		41,52	13,25	31,73			15 . 36 . 13,45	α Serpentis.
15 . 49 . 37,73	35,96		35,00	7,05	32,05			15 . 50 . 6,95	ζ Ursæ Minoris.
16 . 5 . 15,11	14,78		15,07	47,21	32,14			16 . 5 . 47,03	δ Ophiuchi.
16 . 18 . 51,58	51,43		51,91	23,87	31,96			16 . 19 . 23,88	Antares.
17 . 6 . 40,52	40,18		40,46	12,36	31,90			17 . 7 . 12,46	α Herculis.
17 . 26 . 49,68	49,35		49,64	21,54	31,90			17 . 27 . 21,66	α Ophiuchi.
18 . 25 . 0,92	55,32		51,15	22,55	31,40			18 . 25 . 23,21	δ Ursæ Minoris.
5 . 11 . 52,08			51,94			1,28	32,39	5 . 12 . 24,61	Mars 2 L.
7 . 54 . 18,50			18,46					7 . 54 . 51,27	Venus 2 L.
8 . 52 . 34,69			40,97					8 . 54 . 13,83	⊙'s center.
8 . 54 . 47,40									
20 . 8 . 26,07			26,26	59,71	33,45			20 . 8 . 59,72	α^2 Capricorni.
21 . 8 . 31,23			31,19					21 . 9 . 4,70	∗ 7 or 8 mag. N.P.D. 76°. 45′.
21 . 22 . 24,19			24,33	57,92	33,59			21 . 22 . 57,86	β Aquarii.
21 . 56 . 50,45			50,55	24,08	33,53			21 . 57 . 24,12	α Aquarii.
22 . 21 . 51,67			51,85					22 . 22 . 25,43	Uranus.
5 . 14 . 44,11			43,97				33,67	5 . 15 . 17,92	Mars 2 L.

Error of Collimation = − 1″,0.

Level Error = − 5″,11. From July 28. = − 4″,85.

The sudden change of Meridian Error, (which appears certain from subsequent determinations,) took place, I suspect, about noon of July 26. ζ Ursæ Minoris with accompanying clock-stars gives on July 27, 5″,3; on July 30, 7″,6; on August 2, 6″,1: and δ Ursæ Minoris gives on August 2, by the same method, 7″,5. The mean of these is used from July 26.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Aug. 3	(*a*) Venus 2 L.	......	......	6,4	20,3	34,1	47,9	7 . 53 . 2,0	− 13,82	C.
	Mercury 2 L. (very unsteady)	37,0	52,0	6,5	20,9	35,0	49,9	8 . 18 . 4,0		C.
Aug. 4	⊙ 1 L.	42,5	56,2	10,4	24,8	38,9	53,0	8 . 57 . 6,8		C.
	⊙ 2 L.	55,2	9,0	23,3	37,2	51,7	5,6	8 . 59 . 19,9		C.
Aug. 5	β Aquarii	40,8	54,7	8,0	21,8	35,2	48,7	21 . 23 . 2,6		C.
	ε Pegasi	53,5	7,0	20,6	34,2	47,9	1,4	21 . 36 . 15,3		C.
	α Aquarii............	7,3	20,7	34,0	47,8	1,3	14,8	21 . 57 . 28,5		C.
	Uranus	51,3	5,0	19,0	32,5	45,9	0,0	22 . 22 . 13,7		C.
	☽ 2 L.	46,4	1,8	16,2	31,2	46,3	1,2	4 . 16 . 16,4		G.
	(*b*) Aldebaran	13,3	27,4	41,4	55,8	9,5	23,9	4 . 26 . 37,9		G.
	Rigel .... (cloud)	22,5	36,0	49,6	3,3	17,0	30,6	5 . 6	+ 6,82	C.
	β Tauri	34,6	49,8	4,9	20,2	35,5	50,9	5 . 16 . 6,3		C.
	(*c*) Venus 2 L. } ... (cloudy)	......	......	......	......	3,0	17,0	7 . 49 . 30,9	− 27,73	C.
	(*d*) Mercury 2 L. }	......	......	......	23,6	38,0	52,5	8 . 35 . 6,9	− 21,67	C.
Aug. 6	⊙ 1 L................	21,3	35,5	49,5	3,7	17,7	31,8	9 . 4 . 46,0		C.
	⊙ 2 L. .... (cloud)	33,7	......	2,0	16,0	30,2	44,1	9 . 6 . 58,4	− 4,70	C.
	α Herculis	53,8	7,4	21,4	35,5	49,6	3,4	17 . 7 . 17,6		C.
	α Ophiuchi	3,4	17,0	30,8	44,8	58,6	12,4	17 . 27 . 26,3		C.
	δ Ursæ Minoris	......	17.22,8	21. 4,3	24.54,8	28.41,6	32.28,3	18 . 36 . 14,2	− 1 . 53,07	C.
	β Lyræ	39,3	55,0	10,8	27,0	43,4	59,7	18 . 44 . 15,8		C.
	α Aquilæ	31,7	45,0	58,5	12,4	26,0	39,8	19 . 42 . 52,9		C.
	α^2 Capricorni .. (hurried)	......	......	......	22,5	36,3	50,0	20 . 9 . 4,0	− 20,78	C.
	Pallas	25,4	39,0	53,0	6,6	20,6	34,3	21 . 6 . 48,5		C.
	β Aquarii.............	40,3	53,8	7,0	20,8	34,2	48,0	21 . 23 . 1,5		C.
	α Aquarii	6,7	20,0	33,2	47,0	0,5	13,8	21 . 57 . 27,3		C.
	Uranus	42,2	56,0	9,2	23,0	36,8	50,6	22 . 22 . 4,7		C.
Aug. 7	Rigel	20,7	34,2	47,6	1,4	15,0	28,6	5 . 6 . 42,2		C.
	(*e*) β Tauri	32,3	47,4	2,4	18,0	33,5	48,6	5 . 16 . 4,1		C.
	α Orionis	59,0	12,5	25,8	39,6	53,0	6,6	5 . 46 . 20,3		C.
	☽ 2 L................	38,4	53,9	9,4	25,0	40,3	55,5	6 . 3 . 11,3		C.
	Procyon .. (extremely unsteady)	......	37,3	50,4	4,0	17,5	31,3	7 . 30 . 44,4	− 6,75	C.
	Venus 2 L. .. (very unsteady)	12,3	26,0	39,8	54,0	7,4	21,3	7 . 46 . 35,6		C.
	(*f*) Mercury 2 L.	42,4	56,5	10,5	25,7	39,8	53,7	8 . 52 . 8,8		C.
Aug. 8	⊙ 1 L. .... (cloud)	......	......	......	......	54,3	8,2	9 . 12 . 22,3	− 28,15	C.
	⊙ 2 L................	10,4	24,3	38,2	52,4	6,3	20,6	9 . 14 . 34,7		C.
	(*g*) Pallas	50,4	3,7	18,1	31,5	......	......	21 . 4	+ 20,72	G.
	β Aquarii	37,8	51,3	4,8	18,4	32,0	45,6	21 . 22 . 59,3		C.
	α Aquarii .... (clouds)	3,9	17,5	31,0	44,6	58,0	......	21 . 56	+ 13,49	C.
	Uranus	22,3	36,0	50,0	3,7	17,5	31,3	22 . 21 . 45,0		C.
	(*h*) Rigel	19,3	32,6	......	......	......	......	5 . 5	+ 34,01	C.
	Mars 2 L.............	17,7	32,3	46,9	1,8	16,3	31,0	5 . 29 . 45,7		C.
	Procyon ..... (very cloudy)	......	35,7	49,0	......	......	30,0	7 . 30 . 43,5	− 6,75	C.
	Venus 2 L.	58,7	12,3	25,9	40,0	53,7	7,8	7 . 45 . 21,4		C.
	Mercury 2 L.	9,0	23,5	37,6	52,0	6,0	20,4	9 . 0 . 34,8		C.
Aug. 9	(*i*) ⊙ 1 L. } . (unsteady and waving)	45,7	59,6	13,5	27,8	......	......	9 . 16 . 9,8	+ 8,43	C.
	⊙ 2 L. }	57,3	11,4	25,2	39,7	53,6	7,7	9 . 18 . 21,8		C.
	β Leonis.......... (faint)	......	33,6	47,4	1,5	15,3	29,3	11 . 40 . 43,4	− 6,98	C.
	Polaris SP.	......	43.53,0	52. 6,7	0.18,7	8.36,5	......	13 . 24 . 56,4	− 1 . 39,26	C.
	Spica.................	......	......	40,0	53,7	7,5	21,2	13 . 16 . 35,0	− 13,67	C.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, August 8. 4^h.

(*a*) Two wires lost by wrong setting.
(*b*) The first wire was put down 12,3; the counting was corrected before the 2nd wire by looking at the clock.
(*c*) The last wire, which was put down 29,9, is altered 1^s by conjecture.
(*d*) Wire IV. was written down 24,6, evidently 1^s wrong.
(*e*) Wire IV. was put down 17,0, a mistake in writing.
(*f*) Not good: wires IV., VI. and VII. were marked doubtful.
(*g*) Suspended at 4th wire to take the circle observation.
(*h*) Not used for clock rate.
(*i*) Wires V. and VI. were discordant with the rest, and are therefore omitted.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
7 . 52 . 20,32		+6,6	20,27			1,28	33,67	7 . 52 . 54,36	Venus 2 L.
8 . 17 . 20,72			20,59					8 . 17 . 54,70	Mercury 2 L.
8 . 56 . 24,66 8 . 58 . 37,42			30,99					8 . 58 . 5,14	☉'s center.
21 . 22 . 21,68		+6,9	21,86	57,94	36,08	0,90	35,31	21 . 22 . 57,97	β Aquarii.
21 . 35 . 34,27			34,30					21 . 36 . 10,42	ε Pegasi.
21 . 56 . 47,77			47,89	24,11	36,22			21 . 57 . 24,02	α Aquarii.
22 . 21 . 32,48			32,69					22 . 22 . 8,84	Uranus.
4 . 15 . 31,35			31,25				36,21	4 . 16 . 7,62	☽ 2 L.
4 . 25 . 55,60			55,56	31,86	36,30			4 . 26 . 31,93	Aldebaran.
5 . 6 . 3,32			3,51	40,03	36,52			5 . 6 . 39,91	Rigel.
5 . 15 . 20,31			20,14	56,45	36,31			5 . 15 . 56,55	β Tauri.
7 . 48 . 49,24			49,23					7 . 49 . 25,73	Venus 2 L.
8 . 34 . 23,58			23,51					8 . 35 . 0,04	Mercury 2 L.
9 . 4 . 3,64 9 . 6 . 16,03			9,80					9 . 5 . 46,35	☉'s center.
17 . 6 . 35,53	35,22		35,51	12,32	36,81			17 . 7 . 12,36	α Herculis.
17 . 26 . 44,76	44,46		44,76	21,51	36,75			17 . 27 . 21,62	α Ophiuchi.
18 . 24 . 54,60	49,41		45,05	21,40	36,35			18 . 25 . 21,95	δ Ursæ Minoris.
18 . 43 . 27,29			27,06					18 . 44 . 3,97	β Lyræ.
19 . 42 . 12,33	12,04		12,36	49,37	37,01			19 . 42 . 49,31	α Aquilæ.
20 . 8 . 22,42			22,64	59,73	37,09			20 . 8 . 59,61	α^2 Capricorni.
21 . 6 . 6,77			6,77					21 . 6 . 43,77	Pallas.
21 . 22 . 20,80	20,58		20,98	57,96	36,98			21 . 22 . 57,99	β Aquarii.
21 . 56 . 46,93	46,68		47,05	24,12	37,07			21 . 57 . 24,08	α Aquarii.
22 . 21 . 23,21			23,42					22 . 22 . 0,47	Uranus.
5 . 6 . 1,38			1,57	40,08	38,51	1,21	38,32	5 . 6 . 40,15	Rigel.
5 . 15 . 18,05			17,88	56,52	38,64			5 . 15 . 56,47	β Tauri.
5 . 45 . 39,55			39,60	18,20	38,60			5 . 46 . 18,21	α Orionis.
6 . 2 . 24,86			24,70					6 . 3 . 3,32	☽ 2 L.
7 . 30 . 4,07			4,14	42,88	38,74			7 . 30 . 42,84	Procyon.
7 . 45 . 53,77			53,76					7 . 46 . 32,47	Venus 2 L.
8 . 51 . 25,34			25,28					8 . 52 . 4,05	Mercury 2 L.
9 . 11 . 40,12 9 . 13 . 52,41			46,23					9 . 13 . 25,01	☉'s center.
21 . 4 . 31,65			31,65			1,25	38,32	21 . 5 . 11,07	Pallas.
21 . 22 . 18,46			18,64	57,98	39,34			21 . 22 . 58,07	β Aquarii.
21 . 56 . 44,49			44,61	24,15	39,54			21 . 57 . 24,07	α Aquarii.
22 . 21 . 3,69			3,90					22 . 21 . 43,38	Uranus.
5 . 5 . 59,96			0,15	40,11	39,96	1,27	39,67	5 . 6 . 40,09	Rigel.
5 . 29 . 1,67			1,57					5 . 29 . 41,53	Mars 2 L.
7 . 30 . 2,80			2,87	42,90	40,03			7 . 30 . 42,94	Procyon.
7 . 44 . 39,97			39,96					7 . 45 . 20,04	Venus 2 L.
8 . 59 . 51,90			51,84					9 . 0 . 31,99	Mercury 2 L.
9 . 15 . 27,71 9 . 17 . 39,53			33,58					9 . 17 . 13,74	☉'s center.
11 . 40 . 1,44	1,12		1,41	41,80	40,39			11 . 40 . 41,70	β Leonis.
13 . 0 . 19,00	29,60		40,09	19,66	39,57			1 . 1 . 20,45	Polaris SP.
13 . 15 . 53,81	53,60		54,01	34,45	40,44			13 . 16 . 34,38	Spica.

Error of Collimation = − 1″,0.

Level Error = − 4″,85. From Aug. 4. = − 4″,41.

The stars employed for determining the Meridian Error with ζ Ursæ Minoris, Aug. 2, are α Serpentis, δ Ophiuchi, and Antares; with δ Ursæ Minoris on the same day, Antares, α Herculis, and α Ophiuchi, allowing $0^s,07$ for clock rate.

The Meridian Error used from Aug. 5 to Procyon, Aug. 12, is that determined by δ Ursæ Minoris SP., and δ Ursæ Minoris, Aug. 9 and 10, allowing $0^s,81$ for clock rate and change of RA. This is also exactly the mean of six determinations by Polaris SP. and δ Ursæ Minoris with clock stars, viz. by δ Ursæ Minoris, Aug. 6, 7″,7; by Polaris SP. Aug. 9, 6″,3; by Polaris SP. Aug. 11, 6″,7; by δ Ursæ Minoris, Aug. 11, 7″,5; by Polaris SP. Aug. 12, 5″,8; and by δ Ursæ Minoris, Aug. 12, 7″,4.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Aug. 9	Arcturus	48,8	3,0	17,0	31,8	45,9	0,4	14 . 8 . 14,9		C.
	α Coronæ Borealis	20,7	35,7	50,7	6,0	21,2	36,4	15 . 27 . 51,8		C.
	(a) α Serpentis	51,8	5,4	19,0	32,8	46,3	0,0	15 . 35 . 13,7		C.
	α Aquilæ	27,9	41,4	54,7	8,6	22,0	35,7	19 . 42 . 49,5		C.
	α^2 Capricorni	37,6	51,2	4,7	19,0	32,6	46,5	20 . 9 . 0,7		C.
	(b) Pallas	2,0	15,5	29,4	43,3	57,0	10,8	21 . 4 . 25,0		C.
	β Aquarii	36,5	50,0	3,4	17,0	30,7	44,1	21 . 22 . 57,8		C.
	α Aquarii	2,7	16,0	29,3	43,1	56,6	10,0	21 . 57 . 23,5		C.
	Uranus	12,4	26,0	40,0	53,5	7,0	21,3	22 . 21 . 34,9		C.
	Mars 2 L.	8,5	23,1	37,8	52,7	7,7	......	5 . 32	+ 14,71	G.
	α Orionis	56,3	9,8	23,3	36,9	50,4	4,1	5 . 46 . 18,0		G.
	δ U. Min. SP... (extremely faint)	......	......	20.43,6	24.30,6	......	......	6 . 35 . 46,2	− 2 . 30,67	G.& H.
	Venus 2 L...... (unsteady)	54,9	8,8	22,5	36,2	50,3	4,2	7 . 44 . 18,0		B.
Aug. 10	⊙ 1 L. ..... (very unsteady)	32,8	46,1	0,1	14,5	29,0	42,6	9 . 19 . 56,8		B.
	⊙ 2 L. ..... (very unsteady)	44,4	58,2	12,0	26,4	40,2	54,2	9 . 22 . 8,3		B.
	(c) α Coronæ Borealis.....	19,2	34,5	49,1	4,7	19,8	34,9	15 . 27 . 50,1		B.
	α Serpentis	50,8	4,3	17,7	31,4	45,0	58,6	15 . 36 . 12,2		B.
	α Herculis	48,9	2,8	16,3	30,3	44,3	58,4	17 . 7 . 12,4		B.
	α Ophiuchi	58,4	12,1	25,7	39,9	53,4	7,3	17 . 27 . 21,2		B.
	δ Ursæ Minoris	13.29,4	17.15,6	20.59,8	24.47,2	28.33,8	32.21,4	18 . 36 . 9,2		B.
	α Aquilæ	26,6	40,3	53,8	7,8	21,2	34,9	19 . 42 . 48,3		B.
	σ Capricorni	33,1	47,3	1,8	16,1	30,4	44,6	20 . 9 . 59,1		B.
	Pallas	14,3	......	......	56,1	10,0	23,7	21 . 3 . 37,1	− 8,30	B.
	β Aquarii.............	35,1	48,7	2,1	15,7	29,2	43,1	21 . 22 . 56,6		B.
Aug. 11	(d) ⊙ 1 L.	18,9	32,8	46,5	0,1	14,2	27,9	9 . 23 . 42,0		B.
	⊙ 2 L.	30,1	44,2	58,2	12,5	26,3	40,3	9 . 25 . 54,4		B.
	Polaris SP.	35.33,6	43.49,8	52. 5,4	0.16,6	8.34,2	......	13	+ 8 . 12,74	B.
	Arcturus	......	0,8	14,9	29,2	43,4	58,0	14 . 8 . 12,3	− 7,15	B.
	α Herculis	47,4	1,3	15,1	29,1	43,1	57,0	17 . 7 . 10,8		B.
	α Ophiuchi...........	57,0	10,9	24,3	38,3	52,2	6,1	17 . 27 . 20,0		B.
	δ Ursæ Minoris	13.28,6	17.14,6	20.58,2	24.46,8	28.31,8	32.19,4	18 . 36 . 8,4		B.
	α Aquilæ ... (very cloudy)	25,3	39,2	52,7	......	......	33,6	19 . 42 . 46,8	+ 2,72	B.
	(e) Venus 2 L	15,9	30,0	43,5	57,9	11,5	25,0	7 . 42 . 39,1		B.
Aug. 12	⊙ 1 L. ...... (very unsteady)	4,7	18,2	31,9	46,0	0,1	14,2	9 . 27 . 28,1		B.
	⊙ 2 L. ...... (very unsteady)	15,9	30,0	44,1	58,1	12,0	26,1	9 . 29 . 39,9		B.
	Polaris SP... (much motion)	35.35,2	43.48,2	52. 4,6	0.18,8	8.36,4	......	13 . 24 . 53,6	+ 2 . 44,41	B.
	Spica	9,0	22,7	36,0	50,1	3,8	17,4	13 . 16 . 31,2		B.
	Arcturus	44,8	58,9	13,3	27,7	42,0	56,3	14 . 8 . 11,1		B.
	α Herculis.............	46,1	0,0	13,7	27,8	41,7	55,6	17 . 7 . 9,6		B.
	α Ophiuchi	55,6	9,6	23,1	37,1	50,8	4,8	17 . 27 . 18,7		B.
	δ Ursæ Minoris.......	13.27,2	17.12,8	20.54,2	24.44,4	28.31,6	32.18,4	18 . 36 . 6,8		B.
	α Aquilæ...... (blazing)	24,1	37,5	50,8	5,2	18,6	32,0	19 . 42 . 45,7		B.
	α^2 Capricorni	33,6	47,3	1,1	14,9	28,7	42,7	20 . 8 . 56,6		B.
	Pallas .... (very faint)	39,1	53,1	6,8	20,9	34,3	48,1	21 . 2 . 2,1		B.
	β Aquarii.............	32,4	46,1	59,7	13,1	26,9	40,4	21 . 22 . 54,0		B.
	α Aquarii.............	59,1	12,4	25,8	39,2	53,0	6,3	21 . 57 . 19,8		B.
	Uranus	42,8	56,7	10,4	24,0	37,8	51,3	22 . 21 . 5,5		B.
	Procyon ....(cloudy)	17,1	......	44,1	57,7	11,2	24,8	7 . 30 . 38,3	− 4,51	B.
	Venus 2 L. (cloudy, dancing)	41,5	55,3	9,2	23,2	37,0	50,7	7 . 42 . 4,9		B.
Aug. 13	⊙ 1 L. .... (undulating)	49,9	3,7	17,2	31,4	45,2	59,2	9 . 31 . 13,3		B.
	⊙ 2 L. .... (undulating)	1,1	14,8	28,8	42,9	56,7	10,6	9 . 33 . 24,7		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.

(*a*) The first wire has been altered 1^s.

(*b*) Rather doubtful.

(*c*) The first wire was written down 18,2, which is evidently too small.

(*d*) Bad to observe: too faint with dark glass, and too bright without.

(*e*) Cloudy: disturbed.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
14 . 7 . 31,68	31,35	+6,9	31,61	12,04	40,43	1,27	39,67	14 . 8 . 12,03	Arcturus.
15 . 27 . 6,07			5,91	46,26	40,35			15 . 27 . 46,40	α Coronæ Bor.
15 . 35 . 32,71			32,76	13,16	40,40			15 . 36 . 13,26	α Serpentis.
19 . 42 . 8,55			8,58	49,38	40,80			19 . 42 . 49,30	α Aquilæ.
20 . 8 . 18,90			19,12	59,74	40,62			20 . 8 . 59,86	α^2 Capricorni.
21 . 3 . 43,28			43,28					21 . 4 . 24,07	Pallas.
21 . 22 . 17,07			17,25	57,99	40,74			21 . 22 . 58,05	β Aquarii.
21 . 56 . 43,03			43,15	24,16	41,01			21 . 57 . 23,98	α Aquarii.
22 . 20 . 53,59			53,80					22 . 21 . 34,65	Uranus.
5 . 31 . 52,67			52,57			1,22	40,91	5 . 32 . 33,76	Mars 2 L.
5 . 45 . 36,97			37,02	18,26	41,24			5 . 46 . 18,22	α Orionis.
6 . 24 . 29,46	34,29		39,38	20,24	40,86			18 . 25 . 20,62	δ U. Minoris SP.
7 . 43 . 36,42			36,41					7 . 44 . 17,71	Venus 2 L.
9 . 19 . 14,56 9 . 21 . 26,24			20,36					9 . 21 . 1,74	⊙'s center.
15 . 27 . 4,61			4,45	46,25	41,80			15 . 27 . 46,15	α Coronæ Bor.
15 . 35 . 31,43			31,48	13,14	41,66			15 . 36 . 13,19	α Serpentis.
17 . 6 . 30,48			30,46	12,27	41,81			17 . 7 . 12,24	α Herculis.
17 . 26 . 39,72			39,72	21,47	41,75			17 . 27 . 21,52	α Ophiuchi.
18 . 24 . 48,06	42,87		38,51	20,07	41,56			18 . 25 . 20,36	δ Ursæ Minoris.
19 . 42 . 7,56			7,59	49,37	41,78			19 . 42 . 49,50	α Aquilæ.
20 . 9 . 16,06			16,36					20 . 9 . 58,29	σ Capricorni.
21 . 2 . 55,94			55,94					21 . 3 . 37,92	Pallas.
21 . 22 . 15,79			15,97	58,00	42,03			21 . 22 . 57,97	β Aquarii.
9 . 23 . 0,34 9 . 25 . 12,28			6,27			1,31	42,12	9 . 24 . 48,90	⊙'s center.
13 . 0 . 16,66	27,76		38,25	20,85	42,60			1 . 1 . 21,08	Polaris SP.
14 . 7 . 29,28	28,93		29,19	12,01	42,82			14 . 8 . 12,08	Arcturus.
17 . 6 . 29,12	28,79		29,08	12,26	43,18			17 . 7 . 12,13	α Herculis.
17 . 26 . 38,40	38,08		38,38	21,45	43,07			17 . 27 . 21,45	α Ophiuchi.
18 . 24 . 46,83	41,39		37,03	19,73	42,70			18 . 25 . 20,16	δ Ursæ Minoris.
19 . 42 . 6,24	5,94		6,26	49,37	43,11			19 . 42 . 49,46	α Aquilæ.
7 . 41 . 57,56			57,54			1,32	43,47	7 . 42 . 41,40	Venus 2 L.
9 . 26 . 46,17 9 . 28 . 58,02			52,05					9 . 28 . 36,04	⊙'s center.
13 . 0 . 17,21	28,31		38,80	21,40	42,60			1 . 1 . 22,98	Polaris SP.
13 . 15 . 50,02	49,80		50,21	34,42	44,21			13 . 16 . 34,41	Spica.
14 . 7 . 27,73	27,38		27,64	11,99	44,35			14 . 8 . 11,89	Arcturus.
17 . 6 . 27,79	27,46		27,75	12,25	44,50			17 . 7 . 12,16	α Herculis.
17 . 26 . 37,10	36,78		37,08	21,44	44,36			17 . 27 . 21,51	α Ophiuchi.
18 . 24 . 45,06	39,62		35,26	19,41	44,15			18 . 25 . 19,74	δ Ursæ Minoris.
19 . 42 . 4,84	4,54		4,86	49,37	44,51			19 . 42 . 49,41	α Aquilæ.
20 . 8 . 14,99	14,78		15,20	59,74	44,54			20 . 8 . 59,78	α^2 Capricorni.
21 . 1 . 20,62			20,61					21 . 2 . 5,24	Pallas.
21 . 22 . 13,23			13,40	58,01	44,61			21 . 22 . 58,04	β Aquarii.
21 . 56 . 39,37			39,48	24,19	44,71			21 . 57 . 24,16	α Aquarii.
22 . 20 . 24,07			24,27					22 . 21 . 8,97	Uranus.
7 . 29 . 57,69	57,40	+6,8	57,73	42,98	45,25	1,24	44,75	7 . 30 . 42,87	Procyon.
7 . 41 . 23,11			23,08					7 . 42 . 8,23	Venus 2 L.
9 . 30 . 31,41 9 . 32 . 42,80			37,06					9 . 32 . 22,30	⊙'s center.

Error of Collimation = – 1″,0.

Level Error = – 4″,41. From Aug. 11. = – 4″,68.

The stars used for Meridian Error with Polaris SP. Aug. 11, were Arcturus, α Herculis, and α Ophiuchi, allowing $0^{s},19$ for clock rate; and those with δ Ursæ Minoris on the same day, α Herculis and α Aquilæ, requiring no correction for rate.

The stars used with Polaris SP. Aug. 12, were Spica, Arcturus, and α Herculis, allowing $0^{s},10$ for clock rate; and those with δ Ursæ Minoris were α Herculis, α Ophiuchi, α Aquilæ, and α^2 Capricorni, requiring no allowance.

The Meridian Error by Polaris SP. and known stars, Aug. 13. = 6″,07, and that by δ Ursæ Minoris and known stars, Aug. 15. = 7″,53. Instead of these, the mean 6″,8 is used.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Aug. 13	Polaris SP... (great motion)	35.32,4	43.49,2	52. 3,6	0.17,4	8.34,6	......	13.24.52,8	+2.44,42	B.
	Spica	7,7	21,3	35,0	48,8	2,5	16,0	13.16.29,8		B.
	Areturus	43,7	57,7	11,9	26,6	40,8	55,2	14. 8. 9,7		B.
	α Herculis....... (cloudy)	......	......	......	26,9	40,4	54,2	17. 7. 8,3	−20,90	B.
	α Ophiuchi	54,4	8,2	22,1	36,0	49,7	3,4	17.27.17,3		B.
	(a) δ U. Minoris (cloudy and very unsteady)	......	......	20.53,6	24.43,2	28.28,8	32. 8,4	18........	−1.52,74	B.
	α Aquilæ......... (blazing)	23,1	36,4	50,1	4,1	17,0	31,0	19.42.44,6		B.
	α^2 Capricorni.........	32,3	46,1	59,6	13,8	27,5	41,2	20. 8.55,4		B.
	Pallas......... (very faint)	52,1	6,0	19,7	33,2	47,0	0,8	21. 1.15,0		B.
	β Aquarii	31,3	45,0	58,3	12,1	25,9	39,1	21.22.53,0		B.
	α Aquarii.............	57,9	11,3	24,4	38,2	51,9	4,9	21.57.18,8		B.
	Uranus	32,9	46,6	0,2	13,9	27,9	41,6	22.20.55,4		B.
Aug. 15	Arcturus	41,1	55,2	9,4	23,7	38,2	52,5	14. 8. 7,0		B.
	δ Ursæ Minoris	13.22,6	17. 7,2	20.51,4	24.39,4	28.26,8	32.14,4	18.36. 0,8		B.
	α Aquilæ	20,3	33,9	47,0	1,1	14,5	27,9	19.42.41,9		B.
	α^2 Capricorni.........	29,8	43,3	57,1	11,0	24,9	38,8	20. 8.52,6		B.
	β Aquarii.............	28,9	42,1	55,5	9,3	23,1	36,7	21.22.50,1		B.
	α Aquarii............	55,3	8,7	21,9	35,5	48,9	2,8	21.57.16,3		B.
	Uranus	12,8	26,2	39,7	53,8	7,6	21,3	22.20.35,1		B.
Aug. 16	Arcturus..............	39,7	54,2	8,4	22,6	36,9	51,4	14. 8. 5,8		B.
	Procyon..............	12,5	25,6	39,2	52,8	6,5	20,0	7.30.33,5		B.
	Pollux	40,8	56,1	11,2	26,8	42,0	57,3	7.35.13,0		B.
	Venus 2 L. (dancing in clouds)	1,3	15,3	38,9	43,1	57,3	10,7	7.41.24,4		B.
Aug. 17	⊙ 1 L....... (very cloudy)	45,1	59,2	13,1	26,4	40,1	54,1	9.46. 8,1		B.
	α Herculis	39,8	53,6	7,3	21,4	35,5	49,3	17. 7. 3,2		B.
	α Ophiuchi	49,4	3,2	16,7	30,8	44,6	58,5	17.27.12,3		B.
	δ Ursæ Minoris .. (cloudy)	13.20,4	17. 5,2	20.47,6	24.37,8	......	32.12,4	18.35.58,6	+37,76	B.
	α Aquilæ...... (blazing)	17,7	31,7	44,6	58,8	12,3	25,6	19.42.39,7		B.
	α Aquarii ... (very cloudy)	......	6,1	19,8	33,2	46,7	0,3	21.57.....	+ 0,03	B.
	α Orionis	46,3	59,9	13,3	27,0	40,8	54,4	5.46. 7,8		B.
	Mars 2 L. . (faint and cloudy)	43,6	58,5	13,1	27,9	43,2	57,6	5.55.11,8		B.
	Venus 2 L..... (hazy, faint)	15,1	28,9	42,6	56,9	10,7	24,8	7.41.38,7		B.
Aug. 18	⊙ 1 L. } ..... (hazy, nnsteady)	27,2	41,2	55,0	9,1	22,7	36,6	9.49.50,6		B.
	⊙ 2 L. }	38,1	51,7	5,4	19,4	33,3	47,1	9.52. 1,2		B.
	Arcturus	37,3	51,4	5,7	20,2	34,5	48,9	14. 8. 3,4		B.
	☽ 1 L............. (ragged)	4,2	18,6	32,8	47,2	1,6	16,0	14.29.30,4		B.
	α Ophiuchi	47,9	2,2	15,7	29,4	43,3	57,1	17.27.10,9		B.
Aug. 19	δ Ursæ Minoris	13.17,4	17. 1,8	20.45,8	24.34,8	28.21,4	32. 8,4	18.35.55,6		B.
	α Aquilæ	15,3	28,8	42,6	56,1	9,8	23,4	19.42.37,2		B.
	α^2 Capricorni.........	24,7	38,7	52,2	6,1	19,9	34,0	20. 8.47,7		B.
	(b) Pallas	......	29,1	42,6	56,2	......	24,1	20.56.37,5	− 5,47	B.
	α Aquarii............	50,5	4,1	16,9	30,8	44,2	57,8	21.57.11,2		B.
	Uranus	31,7	45,7	59,2	13,2	26,7	40,6	22.19.54,5		B.
	Ceres	31,4	45,7	59,9	14,0	27,9	42,6	23.45.56,2		B.
Aug. 20	(c) Antares	44,1	58,9	14,0	28,9	43,8	58,7	16.19.14,1		B.
Aug. 21	α Herculis	35,3	49,1	2,7	16,9	30,6	44,9	17. 6.58,9		B.
	☽ 1 L... (wavering and uneven)	7,5	23,1	38,5	54,3	10,1	25,9	17.29.41,9		B.
	μ^1 Sagittarii...........	20,9	35,4	49,3	4,2	18,7	33,1	18. 3.47,6		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, August 14. 23^h.

(*a*) The observation is unsatisfactory, and is not used for meridian error.

(*b*) Very hazy and faint at some wires.

(*c*) Not used for clock rate.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
13. 0.16,09	27,19	+6,8	37,53	21,93	44,40	1,24	44,75	1. 1.22,95	Polaris SP.
13.15.48,73	48,51		48,92	34,41	45,49			13.16.34,36	Spica.
14. 7.26,52	26,17		26,43	11,98	45,55			14. 8.11,91	Arcturus.
17. 6.26,55	26,22		26,51	12,23	45,72			17. 7.12,14	α Herculis.
17.26.35,87	35,55		35,85	21,43	45,58			17.27.21,50	α Ophiuchi.
18.24.40,76			31,02	19,09	48,07			18.25.16,72	δ Ursæ Minoris.
19.42. 3,76			3,78	49,36	45,58			19.42.49,55	α Aquilæ.
20. 8.13,70			13,90	59,75	45,85			20. 8.59,69	α^2 Capricorni.
21. 0.33,40			33,39					21. 1.19,22	Pallas.
21.22.12,10			12,26	58,02	45,76			21.22.58,12	β Aquarii.
21.56.38,20			38,31	24,21	45,90			21.57.24,20	α Aquarii.
22.20.14,07			14,26					22.21. 0,16	Uranus.
14. 7.23,87	23,52		23,78	11,95	48,17	1,23	47,40	14. 8.11,90	Arcturus.
18.24.40,37	34,93		30,63	18,50	47,87			18.25.18,97	δ Ursæ Minoris.
19.42. 0,94	0,64		0,96	49,36	48,40			19.42.49,37	α Aquilæ.
20. 8.11,07	10,86		11,27	59,75	48,48			20. 8.59,70	α^2 Capricorni.
21.22. 9,39			9,56	58,04	48,48			21.22.58,05	β Aquarii.
21.56.35,63			35,74	24,23	48,49			21.57.24,26	α Aquarii.
22.19.53,78			53,97					22.20.42,51	Uranus.
14. 7.22,71			22,62	11,94	49,32	1,16	48,60	14. 8.11,90	Arcturus.
7.29.52,87		+7,9	52,97	43,06	50,09		49,76	7.30.43,09	Procyon.
7.34.26,75			26,58	16,68	50,10			7.35.16,71	Pollux.
7.40.43,00			43,02					7.41.33,15	Venus 2 L.
9.45.26,59			26,62					9.46.16,85	⊙ 1 L.
17. 6.21,44	21,11		21,44	12,18	50,74	1,18	49,76	17. 7.12,04	α Herculis.
17.26.30,78	30,46		30,81	21,38	50,57			17.27.21,43	α Ophiuchi.
18.24.38,09	32,65		27,66	17,87	50,21			18.25.18,32	δ Ursæ Minoris.
19.41.58,63	58,33		58,70	49,35	50,65			19.42.49,43	α Aquilæ.
21.56.33,25			33,42	24,25	50,83			21.57.24,26	α Aquarii.
5.45.27,07			27,15	18,47	51,32	1,25	50,98	5.46.18,43	α Orionis.
5.54.27,96			27,86					5.55.19,15	Mars 2 L.
7.40.56,82			56,84					7.41.48,22	Venus 2 L.
9.49. 8,92			14,23					9.51. 5,72	⊙'s center.
9.51.19,46									
14. 7.20,20			20,16	11,91	51,75			14. 8.11,88	Arcturus.
14.28.47,26			47,58					14.29.39,31	☽ 1 L.
17.26.29,50			29,54	21,37	51,83			17.27.21,43	α Ophiuchi.
18.24.35,03	29,74		24,75	17,20	52,45	1,14	52,25	18.25.17,87	δ Ursæ Minoris.
19.41.56,17	55,88		56,25	49,34	53,09			19.42.49,43	α Aquilæ.
20. 8. 6,19	5,99		6,47	59,75	53,28			20. 8.59,68	α^2 Capricorni.
20.55.56,43			56,49					20.56.49,73	Pallas.
21.56.30,78	30,53		30,96	24,27	53,31			21.57.24,25	α Aquarii.
22.19.13,08			13,35					22.20. 6,66	Uranus.
23.45.13,96			14,30					23.46. 7,68	Ceres.
16.18.28,93			29,36	23,64	54,28		53,39	16.19.23,52	Antares.
17. 6.16,92	16,60		16,93	12,12	55,19	1,03	54,44	17. 7.12,10	α Herculis.
17.28.54,47			54,91					17.29.50,10	☽ 1 L.
18. 3. 4,17			4,56					18. 3.59,77	μ^1 Sagittarii.

Error of Collimation = − 1″,0.

Level Error = − 4″,68. From August 18. = − 4″,51.

The Meridian Error, as determined by δ Ursæ Minoris and known stars, Aug. 17, exceeds the determination by δ Ursæ Minoris and known stars, Aug. 15, by + 1″,05. The excess on Aug. 19, by the same method, is 1″,33, (allowing 0^s,11 for rate) and on Aug. 21, 0″,92. Mean excess = 1″,1. Adopted Meridian Error from Aug. 16. = 6″,8 + 1″,1 = 7″,9. (See Introduction.)

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Aug. 21	δ Ursæ Minoris	13.12,2	16.58,0	20.42,6	24.30,8	28.18,4	32. 6,6	18 . 35 . 54,4		B.
	α Aquilæ	13,2	26,7	40,1	54,0	7,6	21,3	19 . 42 . 34,9		B.
	α^2 Capricorni.........	22,7	36,5	50,2	4,2	18,0	31,9	20 . 8 . 45,8		B.
Aug. 22	⊙ 1 L....... (very cloudy)	13,1	26,7	40,3	54,4	......	......	10 . 3	+ 20,71	B.
	⊙ 2 L......... (unsteady)	22,9	36,7	50,5	4,3	18,0	31,8	10 . 6 . 45,7		B.
Aug. 24	(a) ⊙ 1 L...............	33,1	46,7	0,2	14,3	28,0	41,6	10 . 11 . 55,3		B.
	(a) ⊙ 2 L................	42,6	56,5	10,1	24,1	37,7	51,4	10 . 14 . 5,3		B.
	Antares ..... (cloudy)	40,0	55,1	9,7	24,7	39,8	54,9	16 . 19 . 10,0		B.
	α Herculis	32,3	46,1	59,8	14,1	27,6	41,8	17 . 6 . 55,7		B.
	(b) δ Ursæ Minoris	13. 8,4	16.55,8	20.38,4	24.25,6	28.16,2	......	18	+ 3 . 46,99	B.
	α Aquilæ	10,3	23,7	37,2	51,1	4,8	18,2	19 . 42 . 32,0		B.
	α^2 Capricorni..........	19,7	33,5	47,2	1,1	14,9	29,1	20 . 8 . 42,7		B.
	ψ Capricorni.........	41,9	56,9	11,7	26,8	41,6	56,8	20 . 36 . 11,9		B.
	☽ 1 L........... (unsteady)	24,9	39,9	54,7	10,4	25,6	40,8	20 . 51 . 56,1		B.
	ζ Capricorni..........	38,1	52,9	7,2	22,0	36,5	51,2	21 . 17 . 6,1		B.
	β Aquarii............	18,9	32,3	46,1	59,5	13,1	26,8	21 . 22 . 40,4		B.
	γ Capricorni	21,9	36,2	49,9	4,2	18,1	32,4	21 . 30 . 46,9		B.
	Uranus .... (clouds)	41,8	55,3	8,8	23,1	36,6	50,5	22 . 19 . 4,2		B.
	Ceres	14,4	28,5	42,7	57,1	11,2	25,7	23 . 42 . 39,6		B.
	α Orionis	39,1	52,7	5,9	19,8	33,7	47,1	5 . 46 . 0,9		B.
	Mars 2 L......... (cloudy)	12,6	27,5	41,8	57,1	11,4	26,4	6 . 14 . 41,3		B.
	(c) δ Ursæ Minoris SP....	......	......	......	24. 6,6	......	31.38,8	6 . 35 . 25,4	− 6 . 17,41	B.
Aug. 25	δ Ursæ Minoris (very steady)	13. 9,2	16.52,6	20.36,2	24.25,8	28.13,2	31.58,6	18 . 35 . 46,4		B.
	α Aquilæ	9,3	22,9	36,4	50,2	4,0	17,5	19 . 42 . 31,1		B.
	α^2 Capricorni.........	18,7	32,6	46,1	0,3	14,2	28,2	20 . 8 . 41,9		B.
	ψ Capricorni.........	40,9	55,9	10,7	25,9	40,8	55,8	20 . 36 . 11,2		B.
	(d) Pallas	......	10,2	......	38,3	......	5,1	20 . 52		B.
	ζ Capricorni	37,2	51,9	6,4	21,1	35,5	50,4	21 . 17 . 5,2		B.
	β Aquarii	18,1	31,5	44,9	58,6	12,2	26,1	21 . 22 . 39,4		B.
	γ Capricorni (hazy and unsteady)	20,8	35,2	48,8	3,1	17,8	31,3	21 . 30 . 45,7		B.
	☽ 1 L.	13,8	28,3	43,1	57,9	12,4	27,1	21 . 53 . 41,9		B.
Aug. 26	(e) Arcturus.............	29,1	43,2	57,4	12,1	26,4	40,7	14 . 8 . 54,9		B.
	(e) α Herculis.............	30,5	43,9	57,8	11,7	25,8	39,7	17 . 7 . 53,7		B.
	(c) α Ophiuchi	......	......	7,3	21,3	34,9	49,1	17 . 28 . 2,8	− 13,80	B.
	δ Ursæ Minoris.......	14. 6,4	17.52,6	21.34,2	25.25,4	29.11,6	32.58,8	18 . 36 . 47,2		B.
	☽ 2 L................	47,1	1,6	15,4	30,0	44,1	58,3	22 . 54 . 12,6		B.
	(e) Mars 2 L....... (unsteady)	43,4	57,5	12,4	26,7	41,7	56,6	6 . 21 . 11,6		B.
	(e) δ Ursæ Minoris SP. (faint)	13.44,8	17.29,4	......	25. 2,8	28.52,4	32.38,6	6 . 36 . 23,2	− 37,72	B.
	Procyon	2,4	15,7	28,9	42,7	56,1	9,9	7 . 31 . 23,4		B.
	Pollux	30,6	46,1	1,1	16,6	32,2	47,4	7 . 36 . 2,8		B.
	(e) Venus 2 L... (great motion)	55,4	9,5	23,1	37,4	51,2	5,3	7 . 51 . 19,4		B.
Aug. 27	(f) ⊙ 1 L.	......	......	57,8	11,3	25,1	39,0	10 . 23 . 52,8	− 13,70	B.
	⊙ 2 L.	39,8	53,9	......	21,1	34,5	47,8	10 . 26 . 2,0	− 2,31	B.
	δ U. Minoris . (cloudy, faint)	14. 3,4	17.49,8	21.36,4	25.24,2	29. 9,6	32.58,2	18 . 36 . 43,8		B.
	α Aquilæ	7,6	21,1	34,7	48,3	2,1	15,8	19 . 43 . 29,2		B.
	(g) α^2 Capricorni.........	17,2	31,1	44,9	59,1	12,8	26,4	20 . 9 . 40,2		B.
	β Aquarii............	16,5	30,1	43,3	56,9	10,6	24,2	21 . 23 . 37,7		B.
	φ Aquarii............	10,6	24,2	37,8	51,2	4,9	18,2	23 . 6 . 31,9		B.
	ψ^3 Aquarii...........	46,1	59,8	13,4	27,1	40,9	54,7	23 . 11 . 8,9		B.
	☽ 2 L.......... (unsteady)	5,1	18,8	32,4	46,3	0,2	14,3	23 . 47 . 28,2		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, August 22. 1^h. August 26. 0^h. The clock was put forward 1^m.

(a) Steadier than usual.
(b) Very cloudy: fifth wire almost a guess.
(c) So cloudy that none of the wires are certain.
(d) Would scarcely bear sufficient light to shew the wires: very doubtful. (e) Cloudy.
(f) Confused: clouds passing and the wind too loud.
(g) Very cloudy: not used for clock rate.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
18 . 24 . 31,86	26,57	+ 7,9	21,58	16,44	54,86	1,03	54,44	18 . 25 . 16,81	δ Ursæ Minoris.
19 . 41 . 53,97	53,68		54,05	49,33	55,28			19 . 42 . 49,33	α Aquilæ.
20 . 8 . 4,19			4,47	59,74	55,27			20 . 8 . 59,77	α^2 Capricorni.
10 . 3 . 54,33		+7,77	59,34				55,47	10 . 5 . 55,24	☉'s center.
10 . 6 . 4,27									
10 . 11 . 14,17			19,11			0,89	57,53	10 . 13 . 17,02	☉'s center.
10 . 13 . 23,96									
16 . 18 . 24,89			25,31	23,57	58,26			16 . 19 . 23,44	Antares.
17 . 6 . 13,91			13,92	12,07	58,15			17 . 7 . 12,08	α Herculis.
18 . 24 . 27,87	22,58		17,67	15,26	57,59			18 . 25 . 15,88	δ Ursæ Minoris.
19 . 41 . 51,04			51,12	49,31	58,19			19 . 42 . 49,38	α Aquilæ.
20 . 8 . 1,17			1,44	59,73	58,29			20 . 8 . 59,71	α^2 Capricorni.
20 . 35 . 26,80			27,22					20 . 36 . 25,51	ψ Capricorni.
20 . 51 . 10,34			10,74					20 . 52 . 9,04	☽ 1 L.
21 . 16 . 22,00			22,39					21 . 17 . 20,71	ζ Capricorni.
21 . 21 . 59,59			59,81	58,08	58,27			21 . 22 . 58,13	β Aquarii.
21 . 30 . 4,23			4,56					21 . 31 . 2,89	γ Capricorni.
22 . 18 . 22,90			23,16					22 . 19 . 21,52	Uranus.
23 . 41 . 57,03			57,38					23 . 42 . 55,79	Ceres.
5 . 45 . 19,89			19,97	18,67	58,70	0,93	58,36	5 . 46 . 18,55	α Orionis.
6 . 13 . 56,87			56,78					6 . 14 . 55,38	Mars 2 L.
6 . 24 . 6,19	11,11		16,84	15,07	58,23			18 . 25 . 15,45	δ Ursæ Min. SP.
18 . 24 . 26,00	20,93		16,02	14,88	58,86			18 . 25 . 15,09	δ Ursæ Minoris.
19 . 41 . 50,20			50,29	49,31	59,02			19 . 42 . 49,41	α Aquilæ.
20 . 8 . 0,28			0,56	59,73	59,17			20 . 8 . 59,70	α^2 Capricorni.
20 . 35 . 25,89			26,32					20 . 36 . 25,48	ψ Capricorni.
20 . 51 . 37,87			37,95					20 . 52 . 37,12	Pallas.
21 . 16 . 21,10			21,49					21 . 17 . 20,67	ζ Capricorni.
21 . 21 . 58,69			58,92	58,08	59,16			21 . 22 . 58,11	β Aquarii.
21 . 30 . 3,24			3,57					21 . 31 . 2,76	γ Capricorni.
21 . 52 . 57,79			58,14					21 . 53 . 57,35	☽ 1 L.
14 . 8 . 11,97		+ 7,63	11,93	11,81	– 0,12	0,85	– 0,58	14 . 8 . 11,85	Arcturus.
17 . 7 . 11,87			11,88	12,04	+ 0,16			17 . 7 . 11,91	α Herculis.
17 . 27 . 21,28			21,32	21,26	– 0,06			17 . 27 . 21,36	α Ophiuchi.
18 . 25 . 25,17	20,10		15,28	14,52	– 0,76			18 . 25 . 15,35	δ Ursæ Minoris.
22 . 53 . 29,87			30,15					22 . 53 . 30,38	☽ 2 L.
6 . 20 . 27,13			27,05			0,83	+ 0,13	6 . 20 . 27,40	Mars 2 L.
6 . 25 . 4,15	8,87		14,49	14,34	– 0,15			18 . 25 . 14,84	δ Ursæ Min. SP.
7 . 30 . 42,73			42,83	43,28	+ 0,45			7 . 30 . 43,22	Procyon.
7 . 35 . 16,69			16,54	16,93	+ 0,39			7 . 35 . 16,93	Pollux.
7 . 50 . 37,33			37,34					7 . 50 . 37,74	Venus 2 L.
10 . 23 . 11,50			16,25					10 . 24 . 16,74	☉'s center.
10 . 25 . 20,87									
18 . 25 . 23,63	18,56		13,74	14,17	0,43			18 . 25 . 14,51	δ Ursæ Minoris.
19 . 42 . 48,40			48,48	49,30	0,82			19 . 42 . 49,29	α Aquilæ.
20 . 8 . 58,82			59,10	59,72	0,62			20 . 8 . 59,93	α^2 Capricorni.
21 . 22 . 57,05			57,27	58,09	0,82			21 . 22 . 58,14	β Aquarii.
23 . 5 . 51,25			51,47					23 . 5 . 52,40	φ Aquarii.
23 . 10 . 27,27			27,54					23 . 10 . 28,47	ψ^3 Aquarii.
23 . 46 . 46,47			46,69					23 . 46 . 47,64	☽ 2 L.

Error of Collimation = – 1",0.

Level Error = – 4",51. From August 25. = – 4",28.

Meridian Error from Aug. 22 by δ Ursæ Minoris, δ Ursæ Minoris SP., and δ Ursæ Minoris, Aug. 24 and 25.

.... from Aug. 26 by δ Ursæ Minoris, δ Ursæ Minoris SP., and δ Ursæ Minoris, Aug. 26 and 27.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Aug. 28	α Orionis.... (great motion)	35,5	48,9	2,4	16,4	29,8	43,4	5 . 46 . 57,3		B.
	(a) δ Ursæ Minoris SP....	13.41,4	17.27,8	21.16,2	......	......	32.33,2	6 . 36 . 19,6	+ 45,83	B.
	Mars 2 L....... (dancing)	11,6	26,4	40,7	56,1	10,5	25,4	6 . 26 . 40,3		B.
	Procyon......... (cloudy)	59,9	13,8	27,2	40,9	54,4	......	7 . 30	+ 13,56	B.
	Pollux	28,7	43,9	59,1	14,7	29,9	45,4	7 . 36 . 0,7		B.
	Venus 2 L. .... (dancing)	18,1	31,6	45,3	59,4	13,3	27,5	7 . 54 . 41,6		B.
Aug. 29	⊙ 1 L. .... (clouds)	......	......	13,8	27,3	41,1	54,9	10 . 31 . 8,5	− 13,67	B.
	⊙ 2 L. .... (steady)	55,5	9,1	22,6	36,5	50,3	4,1	10 . 33 . 18,0		B.
	Pallas ..... (cloudy and faint)	......	30,8	45,2	......	......	25,9	20 . 50 . 40,3	− 6,80	B.
Aug. 30	α Aquilæ	4,6	18,1	31,5	45,2	59,0	12,3	19 . 43 . 26,2		G.
	α² Capricorni. .... (cloudy)	......	......	41,5	55,4	9,3	23,1	20 . 9 . 37,0	− 13,82	G.
	δ U. Min. SP.. (very cloudy)	......	......	21.13,6	25. 0,2	28.47,8	......	6	− 0,94	B.
	Procyon	58,2	11,7	24,9	38,8	52,3	5,8	7 . 31 . 19,5		B.
	Pollux	26,9	41,9	57,1	12,5	27,8	43,3	7 . 35 . 58,7		B.
	Venus 2 L. (cloudy & unsteady)	7,3	20,9	34,7	49,1	2,9	17,1	7 . 58 . 30,9		B.
	(b) Jupiter 1 L.	8,0	......	35,9	......	4,9	......	8 . 36	+ 14,28	B.
	Jupiter 2 L.	......	23,9	......	52,7	......	......	8 . 35	+ 14,27	B.
Aug. 31	⊙ 1 L. ... (much undulation)	0,8	14,5	27,8	41,6	55,2	9,0	10 . 38 . 22,8		B.
	⊙ 2 L.	9,9	23,6	36,9	50,8	4,4	18,3	10 . 40 . 32,1		B.
	Mercury 1 L. (great motion)	30,7	44,1	57,6	11,4	24,9	38,5	11 . 37 . 52,2		B.
	Spica	48,1	1,7	15,4	29,3	42,9	56,5	13 . 17 . 10,4		B.
	Arcturus	23,8	38,2	52,5	6,9	21,1	35,7	14 . 8 . 50,1		B.
	δ Ursæ Minoris.......	14. 0,8	17.44,2	21.28,6	25.19,4	29. 5,2	32.51,4	18 . 36 . 39,2		B.
	α Aquilæ	3,4	17,1	30,4	44,2	57,7	11,4	19 . 43 . 25,2		B.
	α² Capricorni	12,7	26,6	40,8	54,3	8,2	22,0	20 . 9 . 35,8		B.
	Pallas	3,2	16,7	30,1	43,9	57,7	11,2	20 . 49 . 24,8		B.
	β Aquarii	12,3	25,8	39,1	52,9	6,5	19,9	21 . 23 . 33,4		B.
	Uranus	31,5	45,1	58,6	12,7	26,2	40,1	22 . 18 . 53,9		B.
	φ Aquarii	6,7	20,1	33,4	47,1	0,8	14,1	23 . 6 . 27,7		B.
	ψ³ Aquarii	41,9	55,5	9,2	23,1	36,8	50,4	23 . 11 . 4,3		B.
	Ceres .... (faint)	0,6	14,7	28,9	43,3	57,8	11,9	23 . 38 . 26,9		B.
	δ Ursæ Min. SP. (faint and unsteady)	13.37,4	17.24,8	21.16,6	24.58,4	28.49,2	......	6	+ 3 . 46,45	B.
	Mars 2 L. .... (unsteady)	20,8	35,6	50,5	5,3	19,4	34,6	6 . 34 . 49,4		B.
	Procyon	57,2	10,7	24,1	37,6	51,2	4,8	7 . 31 . 18,5		B.
	Pollux	25,7	40,8	55,9	11,5	26,9	42,3	7 . 35 . 57,6		B.
	Venus 2 L.	11,4	25,3	39,0	53,3	7,4	21,3	8 . 0 . 35,3		B.
										B.
Sept. 1	⊙ 1 L. .... (unsteady)	37,9	51,2	4,7	18,7	32,3	45,8	10 . 41 . 59,7		
	⊙ 2 L.	46,9	0,3	13,9	27,5	41,3	55,0	10 . 44 . 8,6		B.
	Mercury 1 L. (ill defined and cloudy)	19,9	33,4	46,7	0,4	13,6	......	11 . 43	+ 13,55	B.
	Spica .... (cloudy)	47,2	0,9	14,3	27,9	41,8	55,5	13 . 17 . 9,1		B.
	δ Ursæ Minoris	13.56,8	17.43,0	21.25,8	25.15,6	29. 2,4	32.49,4	18 . 36 . 37,6		B.
	α Aquilæ	2,4	15,9	29,3	43,0	56,8	10,5	19 . 43 . 24,0		B.
	α² Capricorni	12,0	25,8	39,3	53,2	7,1	21,0	20 . 9 . 35,0		B.
	Pallas ..... (cloudy, very faint)	......	......	......	......	21,2	34,8	20 . 48 . 48,0	− 27,26	B.
	β Aquarii	11,2	24,7	38,0	51,7	5,4	18,8	21 . 23 . 32,4		B.
Sept. 2	δ Ursæ Min.. (very unsteady)	13.56,4	17.42,4	21.25,2	25.16,4	29. 0,8	32.47,6	18 . 36 . 35,8		B.
	α Aquilæ...... (blazing)	1,7	15,2	28,6	42,3	56,3	9,8	19 . 43 . 23,2		B.
	α² Capricorni... (unsteady)	11,1	24,7	38,3	52,6	6,5	20,2	20 . 9 . 34,1		B.
	Pallas......... (very faint)	51,5	5,1	18,8	32,4	45,7	59,4	20 . 48 . 13,1		B.
	β Aquarii............	10,4	23,8	37,1	50,8	4,5	18,2	21 . 23 . 31,5		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.

(*a*) Very faint at times from clouds passing. | (*b*) Cloudy, faint, and the wind loud.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
5 . 46 . 16,24		+ 7,53	16,32	18,79	2,47	1,02	2,17	5 . 46 . 18,74	α Orionis.
6 . 25 . 1,47	5,55		11,74	13,65	1,91			18 . 25 . 14,18	δ Ursæ Min. SP.
6 . 25 . 55,86			55,77					6 . 25 . 58,21	Mars 2 L.
7 . 30 . 40,80			40,90	43,33	2,43			7 . 30 . 43,39	Procyon.
7 . 35 . 14,63			14,48	16,98	2,50			7 . 35 . 16,97	Pollux.
7 . 53 . 59,55			59,56					7 . 54 . 2,07	Venus 2 L.
10 . 30 . 27,45 10 . 32 . 36,59			32,09					10 . 31 . 34,71	☉'s center.
20 . 49 . 58,75			58,82					20 . 50 . 1,87	Pallas.
19 . 42 . 45,27		+ 6,01	45,27	49,27	4,00	1,08	3,18	19 . 42 . 49,34	α Aquilæ.
20 . 8 . 55,44			55,62	59,71	4,09			20 . 8 . 59,71	α^2 Capricorni.
6 . 24 . 59,59	4,31		8,74	12,94	4,20	1,02	4,29	18 . 25 . 13,30	δ Ursæ Min. SP.
7 . 30 . 38,75			38,77	43,38	4,61			7 . 30 . 43,38	Procyon.
7 . 35 . 12,60			12,40	17,04	4,64			7 . 35 . 17,01	Pollux.
7 . 57 . 48,99			48,93					7 . 57 . 53,56	Venus 2 L.
8 . 35 . 50,55 8 . 35 . 52,57			51,47					8 . 35 . 56,13	Jupiter's center.
10 . 37 . 41,67 10 . 39 . 50,85			46,26					10 . 38 . 51,00	☉'s center.
11 . 37 . 11,34			11,39					11 . 37 . 16,17	Mercury 1 L.
13 . 16 . 29,19			29,34	34,25	4,91			13 . 16 . 34,19	Spica.
14 . 8 . 6,90			6,80	11,74	4,94			14 . 8 . 11,69	Arcturus.
18 . 25 . 18,40	13,33		9,53	12,76	3,23			18 . 25 . 14,60	δ Ursæ Minoris.
19 . 42 . 44,20			44,20	49,26	5,06			19 . 42 . 49,33	α Aquilæ.
20 . 8 . 54,34			54,52	59,70	5,18			20 . 8 . 59,67	α^2 Capricorni.
20 . 48 . 43,94			43,94					20 . 48 . 49,11	Pallas.
21 . 22 . 52,84			52,97	58,09	5,12			21 . 22 . 58,17	β Aquarii.
22 . 18 . 12,58			12,75					22 . 18 . 17,99	Uranus.
23 . 5 . 47,13			47,26					23 . 5 . 52,53	φ Aquarii.
23 . 10 . 23,03			23,20					23 . 10 . 28,48	ψ^3 Aquarii.
23 . 37 . 43,44			43,69					23 . 37 . 48,99	Ceres.
6 . 24 . 59,73	4,45		8,88	12,56	3,68	0,96	5,38	18 . 25 . 14,52	δ Ursæ Min. SP.
6 . 34 . 5,09			4,95					6 . 34 . 10,59	Mars 2 L.
7 . 30 . 37,73			37,75	43,40	5,65			7 . 30 . 43,43	Procyon.
7 . 35 . 11,53			11,33	17,07	5,74			7 . 35 . 17,01	Pollux.
7 . 59 . 53,28			53,22					7 . 59 . 58,92	Venus 2 L.
10 . 41 . 18,62 10 . 43 . 27,65			23,13					10 . 42 . 28,94	☉'s center.
11 . 43 . 0,35			0,40					11 . 43 . 6,25	Mercury 1 L.
13 . 16 . 28,10	27,89		28,25	34,24	5,99			13 . 16 . 34,16	Spica.
18 . 25 . 15,80	10,60		6,80	12,36	5,56			18 . 25 . 12,92	δ Ursæ Minoris.
19 . 42 . 43,13	42,84		43,12	49,25	6,13			19 . 42 . 49,29	α Aquilæ.
20 . 8 . 53,34	53,14		53,51	59,69	6,18			20 . 8 . 59,70	α^2 Capricorni.
20 . 48 . 7,41			7,41					20 . 48 . 13,62	Pallas.
21 . 22 . 51,74	51,52		51,87	58,08	6,21			21 . 22 . 58,11	β Aquarii.
18 . 25 . 14,94	9,74	+ 6,47	5,65	11,96	6,31	0,93	6,14	18 . 25 . 12,50	δ Ursæ Minoris.
19 . 42 . 42,44	42,15		42,45	49,24	6,79			19 . 42 . 49,35	α Aquilæ.
20 . 8 . 52,50	52,30		52,69	59,68	6,99			20 . 8 . 59,61	α^2 Capricorni.
20 . 47 . 32,28			32,30					20 . 47 . 39 25	Pallas.
21 . 22 . 50,90	50,68		51,06	58,08	7,02			21 . 22 . 58,03	β Aquarii.

Error of Collimation = – 1″,0.

Level Error = – 4″,28. From Sept. 1. = – 4″,42.

Meridian Error from Aug. 28, by δ Ursæ Minoris SP., Aug. 28, compared with δ Ursæ Minoris, Aug. 27, allowing $2^s,05$ for loss of clock and change of RA.

Meridian Error from Aug. 30, by two sets of three consecutive transits of δ Ursæ Minoris on Aug. 30, 31, and Sept. 1, the first giving 6″,53, and the other 5″,49. The mean is used.

Meridian Error by δ Ursæ Minoris SP. and known stars, Sept. 1. = 6″,82, and by δ Ursæ Minoris and known stars, Sept. 2. = 7″,28, shewing an increase of 0″,46. Adopted Meridian Error for Sept. 2 and 3. = 6″,01 + 0″,46 = 6″,47.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Sept. 2	Uranus ……………	11,5	24,9	38,7	52,7	6,3	20,1	22 . 18 . 33,9		B.
	Ceres ……… (very faint)	24,1	38,3	52,7	7,3	21,8	36,1	23 . 36 . 50,6		B.
	(*a*) Jupiter 1 L. ………	34,1	……	2,3	……	31,1	……	8 . 38 . 59,6		B.
	Jupiter 2 L. ………	……	50,9	……	19,4	……	47,9	8 . 38 …..		B.
	(*b*) Regulus…………	……	……	……	30,6	44,8	58,4	10 . 0 . 12,2	– 20,75	B.
Sept. 3	⊙ 1 L. } …… (much waving)	50,9	4,7	17,9	31,6	45,3	59,1	10 . 49 . 12,7		B.
	⊙ 2 L.	59,9	13,3	26,9	40,7	54,1	8,0	10 . 51 . 21,5		B.
	α Herculis …………	22,7	36,4	50,0	4,1	18,0	31,9	17 . 7 . 45,8		C.
	α Ophiuchi …………	32,0	45,7	59,4	13,3	27,3	41,0	17 . 27 . 54,9		C.
	β Aquarii …………	9,5	22,8	36,0	50,0	3,4	16,8	21 . 23 . 30,4		C.
Sept. 5	⊙ 1 L. } . (wind loud, unsteady)	2,9	16,7	30,3	43,7	57,3	10,9	10 . 56 . 24,4		B.
	⊙ 2 L.	11,7	25,1	38,4	52,2	6,0	19,8	10 . 58 . 33,3		B.
	Mercury 1 L. } … (cloudy)	48,6	2,0	15,3	29,0	42,3	55,9	12 . 6 . 9,4		B.
	Arcturus	19,2	33,7	47,8	2,3	16,7	30,8	14 . 8 . 45,3		B.
	α Herculis… (very cloudy)	20,7	34,3	48,1	……	16,3	30,1	17 . 7 …..	+ 8,36	B.
	δ Ursæ Minoris (cloudy and faint)	13.53,2	17.38,6	21.22,6	25.11,8	28.56,2	32.45,4	18 . 36 . 34,2		B.
	α Aquilæ …………	58,7	12,5	25,9	39,6	53,2	6,9	19 . 43 . 20,4		B.
	α^2 Capricorni …. (cloudy)	8,7	22,1	35,6	49,9	3,5	17,4	20 . 9 . 31,1		B.
	β Aquarii …………	7,6	21,2	34,3	48,2	1,8	15,3	21 . 23 . 28,9		B.
	Uranus ……………	41,6	56,1	9,2	23,0	36,8	50,6	22 . 18 . 4,2		B.
	δ U. Min. SP. (cloudy and faint)	……	……	……	24.51,6	28.39,2	32.22,8	6 . 36 . 10,2	– 5 . 40,43	B.
	Mars 2 L. … (very unsteady)	47,2	1,7	16,3	30,8	45,6	0,9	6 . 48 . 15,6		B.
	☽ 2 L. …… (very cloudy)	……	……	……	15,1	30,9	46,2	7 . 33 . 2,1	– 23,14	B.
	Venus 2 L. …… (cloudy)	1,3	14,9	28,7	43,1	56,9	11,1	8 . 12 . 25,1		B.
Sept. 6	δ Ursæ Minoris…….	13.51,6	17.37,2	……	25.11,4	28.55,6	32.44,2	18 . 36 . 31,8	– 38,22	B.
	α Aquilæ …………	58,1	11,4	24,9	38,8	52,4	5,9	19 . 43 . 19,6		B.
	α^2 Capricorni………	7,6	21,2	34,9	48,8	2,9	16,5	20 . 9 . 30,6		B.
	Pallas ……… (very faint)	40,6	54,0	7,4	21,1	34,6	47,9	20 . 46 . 1,5		B.
	β Aquarii ……. (hazy)	6,8	20,3	33,7	47,1	1,1	14,5	21 . 23 . 27,9		B.
	Uranus…. (faint and cloudy)	32,1	46,4	59,9	13,5	26,9	40,7	22 . 17 . 55,1		B.
	Procyon …………	51,9	5,5	18,9	32,6	46,1	59,9	7 . 31 . 13,4		B.
	Pollux ……………	20,7	35,8	51,1	6,6	21,8	37,1	7 . 35 . 52,5		B.
	Venus 2 L. (ill defined, cloudy)	39,3	53,1	6,9	20,8	34,7	49,1	8 . 15 . 3,2		B.
Sept. 7	⊙ 1 L…………….	14,7	28,2	41,8	55,5	9,1	22,7	11 . 3 . 36,2		B.
	⊙ 2 L…………….	23,3	37,1	50,2	4,3	17,6	31,2	11 . 5 . 44,9		B.
	(*c*) α Aquarii … (very cloudy)	……	……	……	……	26,7	40,1	21 . 57 . 53,5	– 26,98	B.
	Venus 2 L. …… (cloudy)	21,8	35,7	49,4	3,7	17,5	31,4	8 . 17 . 45,6		B.
	Jupiter 1 L. . (very cloudy)	……	……	……	……	31,1	45,4	8 . 42 . 59,8	– 28,49	B.
Sept. 8	α Aquilæ …………	56,2	10,1	23,4	37,1	51,1	4,7	19 . 43 . 18,2		B.
	α^2 Capricorni …. (hazy)	6,1	19,5	33,2	47,1	1,1	14,9	20 . 9 . 28,7		B.
	β Aquarii …………	5,1	18,8	31,9	45,7	59,3	12,9	21 . 23 . 26,4		B.
	α Aquarii … (hazy and faint)	32,1	45,0	57,7	12,1	25,6	39,1	21 . 57 . 52,7		B.
Sept. 9	α Aquilæ…………	55,4	9,4	22,5	36,2	49,8	3,5	19 . 43 . 17,1		B.
	α^2 Capricorni ….. (hazy)	5,4	19,0	32,5	46,3	0,2	14,1	20 . 9 . 27,8		B.
	Pallas……… (very faint)	13,2	26,4	40,0	53,4	7,0	20,5	20 . 44 . 34,2		B.
	β Aquarii…………	4,7	17,8	31,1	44,9	58,4	11,9	21 . 23 . 25,5		B.
	α Aquarii…………	30,6	43,9	57,3	11,1	24,8	38,2	21 . 57 . 51,6		B.
	Uranus ……………	3,6	17,3	30,8	44,6	58,7	12,2	22 . 17 . 26,2		B.
	α Pegasi …………	43,9	57,7	11,6	25,5	39,3	53,3	22 . 57 . 7,4		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, Sept. 4. 23^h.

(*a*) Very faint and difficult to observe.
(*b*) Very hazy and exceedingly faint.

(*c*) Not used for clock rate.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
22 . 17 . 52,58		+ 6,47	52,76			0,93	6,14	22 . 17 . 59,77	Uranus.
23 . 36 . 7,27			7,54					23 . 36 . 14,59	Ceres.
8 . 38 . 16,77			18,00			0,98	7,12	8 . 38 . 25,47	Jupiter's center.
8 . 38 . 19,40									
9 . 59 . 30,75			30,73	38,23	7,50			9 . 59 . 38,26	Regulus.
10 . 48 . 31,74			36,21					10 . 49 . 43,77	⊙'s center.
10 . 50 . 40,62									
17 . 7 . 4,13			4,09	11,91	7,82			17 . 7 . 11,91	α Herculis.
17 . 27 . 13,37			13,35	21,13	7,78			17 . 27 . 21,18	α Ophiuchi.
21 . 22 . 49,84			50,00	58,08	8,08			21 . 22 . 57,99	β Aquarii.
10 . 55 . 43,74		+ 7,66	48,13			0,83	8,94	10 . 56 . 57,45	⊙'s center.
10 . 57 . 52,35									
12 . 5 . 28,93			29,09					12 . 5 . 38,45	Mercury 1 L.
14 . 8 . 2,25			2,20	11,68	9,48			14 . 8 . 11,63	Arcturus.
17 . 7 . 2,26			2,27	11,87	9,60			17 . 7 . 11,80	α Herculis.
18 . 25 . 11,71	6,51		1,67	10,67	9,00			18 . 25 . 11,25	δ Ursæ Minoris.
19 . 42 . 39,60			39,67	49,21	9,54			19 . 42 . 49,29	α Aquilæ.
20 . 8 . 49,76			50,03	59,66	9,63			20 . 8 . 59,67	α^2 Capricorni.
21 . 22 . 48,19			48,41	58,08	9,67			21 . 22 . 58,09	β Aquarii.
22 . 17 . 23,07			23,33					22 . 17 . 33,04	Uranus.
6 . 24 . 50,52	55,36		1,01	10,46	9,45	0,84	9,75	18 . 25 . 10,98	δ Ursæ Min. SP.
6 . 47 . 31,15			31,08					6 . 47 . 41,07	Mars 2 L.
7 . 32 . 15,43			15,30					7 . 32 . 25,31	☽ 2 L.
8 . 11 . 43,01			43,02					8 . 11 . 53,05	Venus 2 L.
18 . 25 . 10,41	5,21		0,37	10,24	9,87			18 . 25 . 10,76	δ Ursæ Minoris.
19 . 42 . 38,73			38,80	49,20	10,40			19 . 42 . 49,24	α Aquilæ.
20 . 8 . 48,93			49,20	59,66	10,46			20 . 8 . 59,66	α^2 Capricorni.
20 . 45 . 21,01			21,10					20 . 45 . 31,58	Pallas.
21 . 22 . 47,35			47,57	58,08	10,51			21 . 22 . 58,07	β Aquarii.
22 . 17 . 13,51			13,77					22 . 17 . 24,30	Uranus.
7 . 30 . 32,61			32,72	43,55	10,83	0,82	10,60	7 . 30 . 43,58	Procyon.
7 . 35 . 6,52			6,36	17,24	10,88			7 . 35 . 17,22	Pollux.
8 . 14 . 21,01			21,02					8 . 14 . 31,90	Venus 2 L.
11 . 2 . 55,46			59,86					11 . 4 . 10,84	⊙'s center.
11 . 5 . 4,09									
21 . 57 . 13,12			13,28	24,34	11,06			21 . 57 . 24,63	α Aquarii.
8 . 17 . 3,58			3,59			0,83	11,34	8 . 17 . 15,22	Venus 2 L.
8 . 42 . 16,94			16,91					8 . 42 . 28,55	Jupiter 1 L.
19 . 42 . 37,26			37,34	49,18	11,84			19 . 42 . 49,36	α Aquilæ.
20 . 8 . 47,23			47,51	59,64	12,13			20 . 8 . 59,55	α^2 Capricorni.
21 . 22 . 45,73			45,95	58,07	12,12			21 . 22 . 58,03	β Aquarii.
21 . 57 . 12,04			12,21	24,34	12,13			21 . 57 . 24,31	α Aquarii.
19 . 42 . 36,27			36,35	49,16	12,81	0,84	12,19	19 . 42 . 49,23	α Aquilæ.
20 . 8 . 46,47			46,75	59,63	12,88			20 . 8 . 59,65	α^2 Capricorni.
20 . 43 . 53,53			53,63					20 . 44 . 6,55	Pallas.
21 . 22 . 44,90			45,12	58,07	12,95			21 . 22 . 58,05	β Aquarii.
21 . 57 . 11,07			11,24	24,34	13,10			21 . 57 . 24,20	α Aquarii.
22 . 16 . 44,77			45,05					22 . 16 . 58,02	Uranus.
22 . 56 . 25,53			25,56	38,45	12,89			22 . 56 . 38,55	α Pegasi.

Error of Collimation = − 1″,0.

Level Error = − 4″,42. From Sept. 8. = − 4″,23.

Meridian Error from Sept. 5, by δ Ursæ Minoris, δ Ursæ Minoris SP., and δ Ursæ Minoris, Sept. 5 and 6.

No observations of either δ Ursæ Minoris, or Polaris, having been obtained between Sept. 6, and Sept. 22, the mean of the preceding and succeeding determinations, viz. 7″,58, is used from Sept. 12. to Sept. 19.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Sept. 9	Ceres	34,2	48,6	2,9	17,3	31,8	46,0	23 . 31 . 0,7		B.
Sept. 10	α Aquilæ	54,6	8,5	22,1	35,6	49,2	2,7	19 . 43 . 16,8		B.
	α^2 Capricorni (flaring)	4,6	18,3	32,0	45,7	59,8	13,5	20 . 9 . 27,7		B.
	β Aquarii	4,0	17,2	30,8	44,5	58,1	11,8	21 . 23 . 25,2		B.
	Uranus (very faint)	54,4	8,0	21,7	35,3	49,2	3,2	22 . 17 . 17,0		B.
	α Pegasi	43,2	57,3	10,9	24,9	38,9	52,8	22 . 57 . 7,1		B.
	Ceres	42,9	57,8	12,1	26,3	40,8	55,3	23 . 30 . 9,9		B.
Sept. 12	α Aquilæ	53,3	6,9	20,3	34,1	47,7	1,6	19 . 43 . 15,0		B.
	α^2 Capricorni (cloudy)	3,1	16,7	30,4	44,2	58,1	12,2	20 . 9 . 25,8		B.
	(a) Mars 2 L.	......	......	42,2	56,4	11,3	26,2	7 . 6 . 40,7	− 14,66	B.
	Pollux (very cloudy)	16,3	31,4	46,6	2,2	17,5	32,9	7 . 35 . 48,3		B.
	Venus 2 L. (thick clouds)	0,4	14,5	28,0	42,2	......	......	8 . 31	+ 20,99	B.
Sept. 13	⊙ 1 L. } (very unsteady)	46,0	59,5	13,1	26,6	40,2	53,6	11 . 25 . 7,3		B.
	⊙ 2 L. } (very unsteady)	54,3	8,0	21,1	34,7	48,4	2,1	11 . 27 . 15,6		B.
	α Aquilæ	52,9	6,3	19,5	33,4	47,1	0,7	19 . 43 . 14,3		B.
	β Aquilæ	21,3	35,0	47,9	2,0	15,4	29,1	19 . 47 . 42,7		B.
	α^2 Capricorni	2,1	15,7	29,8	43,5	57,6	11,3	20 . 9 . 25,2		B.
	(b) Pallas	......	......	......	12,3	26,0	39,7	20 . 42 . 52,3	− 20,33	B.
	β Aquarii	1,7	15,1	28,3	41,8	55,6	9,2	21 . 23 . 22,9		B.
	Uranus (too cloudy)	26,5	39,9	53,9	7,8	21,3	35,2	22 . 16 . 49,1		B.
	α Pegasi	41,1	55,0	8,7	22,8	36,9	50,6	22 . 57 . 4,5		B.
	Ceres (faint and hazy)	9,7	23,7	37,7	52,0	6,8	21,3	23 . 27 . 35,5		B.
Sept. 14	α Aquilæ	51,6	5,2	18,9	32,4	46,2	59,9	19 . 43 . 13,5		B.
	β Aquilæ	20,5	34,1	47,3	1,0	14,7	28,1	19 . 47 . 41,9		B.
	β Aquarii	0,9	14,2	27,7	41,3	54,7	8,7	21 . 23 . 21,9		B.
	ε Pegasi	12,9	26,4	40,2	53,9	7,5	21,1	21 . 36 . 35,0		B.
	Uranus	17,3	30,9	44,4	58,5	12,3	26,1	22 . 16 . 40,0		B.
	Ceres	17,9	32,3	46,6	1,3	16,0	30,2	23 . 26 . 44,3		B.
	Venus 2 L. (cloudy)	18,3	32,3	46,2	0,3	14,3	28,3	8 . 38 . 42,2		B.
Sept. 15	(c) ⊙ 1 L.	......	9,2	......	36,0	49,6	3,8	11 . 32	− 3,38	B.
Sept. 16	(c) ⊙ 1 L.	29,9	......	57,1	10,8	24,2	37,7	11 . 35 . 51,3	− 4,50	B.
	⊙ 2 L.	38,3	......	5,1	18,9	......	46,0	11 . 37 . 59,4	− 2,70	B.
	(c) Arcturus	......	......	......	53,8	7,9	22,3	14 . 8 . 36,7	− 21,54	B.
	(c) α Aquilæ	49,7	3,7	16,9	30,8	44,3	58,0	19 . 43 . 11,6		B.
	(c) α^2 Capricorni	59,8	13,2	26,9	40,9	......	......	20 . 8	+ 20,77	B.
	(d) β Aquarii (very cloudy)	58,8	......	......	39,2	......	6,9	21 . 23 . 20,3	− 6,82	B.
Sept. 19	(c) ⊙ 1 L.	......	......	......	54,2	7,3	20,7	11 . 46 . 34,4	− 20,29	B.
	⊙ 2 L.	21,9	35,0	48,3	2,1	15,8	......	11 . 48	+ 13,53	B.
	Jupiter 1 L.	39,9	......	8,0	......	36,3	......	8 . 52 . 5,1		B.
	Jupiter 2 L.	......	56,3	......	24,9	......	53,3	8 . 51		B.
	Venus 2 L.	......	......	27,2	41,1	54,8	9,0	8 . 55 . 22,7	− 13,93	B.
Sept. 20	(c) ⊙ 1 L.	48,1	1,7	14,9	28,4	41,9	55,7	11 . 50 . 9,1		B.
	⊙ 2 L.	56,2	9,9	23,1	37,0	50,1	4,0	11 . 52 . 17,4		B.
	α Pegasi	34,7	48,6	2,3	16,2	30,5	44,2	22 . 56 . 58,0		B.
	Ceres (very faint)	13,3	......	......	56,6	11,2	25,6	23 . 21 . 40,3	− 8,72	B.
	α Andromedæ	50,6	6,1	20,9	36,3	51,6	7,1	0 . 0 . 22,2		B.
	(c) Regulus	34,7	48,7	1,9	15,9	30,0	43,7	9 . 59 . 57,5		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, Sept. 19. 1^h.

(*a*) Very much hurried.
(*b*) Very faint, scarcely bearing any light: doubtful transit.
(*c*) All these observations cloudy.
(*d*) The middle wire was put down 38,2.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	' s.	h. m. s.	
23 . 30 . 17,36		+ 7,66	17,73			0,84	12,19	23 . 30 . 30,74	Ceres.
19 . 42 . 35,64			35,72	49,15	13,43	0,54	12,92	19 . 42 . 49,08	α Aquilæ.
20 . 8 . 45,94			46,22	59,62	13,40			20 . 8 . 59,59	α^2 Capricorni.
21 . 22 . 44,51			44,73	58,06	13,33			21 . 22 . 58,13	β Aquarii.
22 . 16 . 35,54			35,82					22 . 16 . 49,24	Uranus.
22 . 56 . 25,01			25,04	38,45	13,41			22 . 56 . 38,48	α Pegasi.
23 . 29 . 26,44			26,81					23 . 29 . 40,26	Ceres.
19 . 42 . 34,13		+ 7,58	34,21	49,12	14,91	0,74	14,33	19 . 42 . 49,15	α Aquilæ.
20 . 8 . 44,36			44,63	59,60	14,97			20 . 8 . 59,58	α^2 Capricorni.
7 . 5 . 56,70			56,63			0,76	15,03	7 . 6 . 11,88	Mars 2 L.
7 . 35 . 2,17			2,02	17,42	15,40			7 . 35 . 17,29	Pollux.
8 . 31 . 42,26			42,28					8 . 31 . 57,58	Venus 2 L.
11 . 24 . 26,62			30,87					11 . 25 . 46,26	⊙'s center.
11 . 26 . 34,89									
19 . 42 . 33,46			33,54	49,11	15,57			19 . 42 . 49,20	α Aquilæ.
19 . 47 . 1,91			2,00					19 . 47 . 17,66	β Aquilæ.
20 . 8 . 43,60			43,87	59,59	15,72			20 . 8 . 59,54	α^2 Capricorni.
20 . 42 . 12,24			12,33					20 . 42 . 28,02	Pallas.
21 . 22 . 42,08			42,30	58,05	15,75			21 . 22 . 58,01	β Aquarii.
22 . 16 . 7,67			7,94					22 . 16 . 23,68	Uranus.
22 . 56 . 22,80			22,83	38,46	15,63			22 . 56 . 38,59	α Pegasi.
23 . 26 . 52,38			52,74					23 . 27 . 8,51	Ceres.
19 . 42 . 32,53			32,63	49,10	16,47	0,82	15,77	19 . 42 . 49,08	α Aquilæ.
19 . 47 . 1,08			1,19					19 . 47 . 17,64	β Aquilæ.
21 . 22 . 41,34			41,57	58,04	16,47			21 . 22 . 58,07	β Aquarii.
21 . 35 . 53,86			53,96					21 . 36 . 10,47	ε Pegasi.
22 . 15 . 58,50			58,78					22 . 16 . 15,31	Uranus.
23 . 26 . 1,23			1,60					23 . 26 . 18,17	Ceres.
8 . 38 . 0,27			0,31			0,82	16,59	8 . 38 . 17,19	Venus 2 L.
11 . 31 . 36,27			36,42					11 . 31 . 53,40	⊙ 1 L.
11 . 35 . 10,67			14,90			0,90	17,50	11 . 36 . 32,84	⊙'s center.
11 . 37 . 18,84									
14 . 7 . 53,63			53,62	11,57	17,95			14 . 8 . 11,65	Arcturus.
19 . 42 . 30,71			30,81	49,07	18,26			19 . 42 . 49,05	α Aquilæ.
20 . 8 . 40,97			41,25	59,56	18,31			20 . 8 . 59,51	α^2 Capricorni.
21 . 22 . 39,48			39,71	58,03	18,32			21 . 22 . 58,01	β Aquarii.
11 . 45 . 53,86		+ 7,51	58,16			0,82	20,44	11 . 47 . 19,00	⊙'s center.
11 . 48 . 2,15									
8 . 51 . 22,32			23,58				21,26	8 . 51 . 45,14	Jupiter's center.
8 . 51 . 24,83									
8 . 54 . 41,03			41,07					8 . 55 . 2,63	Venus 2 L.
11 . 49 . 28,55			32,84					11 . 50 . 54,50	⊙'s center.
11 . 51 . 36,82									
22 . 56 . 16,36			16,40	38,47	22,07			22 . 56 . 38,44	α Pegasi.
23 . 20 . 56,68			57,05					23 . 21 . 19,11	Ceres.
23 . 59 . 36,40			36,28	58,33	22,05			23 . 59 . 58,36	α Andromedæ.
9 . 59 . 16,06			16,11	38,51	22,40	0,72	22,06	9 . 59 . 38,47	Regulus.

Error of Collimation = – 1″,0.

Level Error = – 4″,23. From Sept. 14. = – 3″,87.

Meridian Error from Sept. 19, by Polaris SP. Sept. 22, and Polaris, Sept. 23, allowing $+ 1^s,59$ for clock rate, and $- 0^s,35$ for change of Æ.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Sept. 21	☉ 1 L. } (hazy, ill defined)	22,6	36,1	49,4	3,3	16,9	30,1	11 . 53 . 43,7		B.
	☉ 2 L.	31,1	44,6	57,9	11,4	24,9	38,3	11 . 55 . 52,0		B.
	☽ 1 L. (unsteady, cloudy)	25,5	40,1	54,4	9,7	24,5	39,3	21 . 28 . 53,9		B.
	α Pegasi (cloudy)	34,0	47,8	1,7	15,8	29,8	43,6	22 . 56 . 57,5		B.
Sept. 22	Polaris SP. (cloudy)	......	......	......	0.54,8	9.14,6	17.19,4	13 . 25 . 37,6	− 12 . 22,37	B.
Sept. 23	α Herculis (cloudy)	5,8	19,4	33,2	47,3	1,3	15,4	17 . 7 . 29,8		B.
	α Ophiuchi	15,3	28,9	42,4	56,5	10,2	24,2	17 . 27 . 38,0		B.
	ζ Aquilæ	48,2	2,2	15,6	29,8	43,7	57,5	18 . 58 . 11,6		B.
	γ Aquilæ	24,4	38,2	51,4	5,2	19,1	32,7	19 . 38 . 46,5		B.
	α Aquilæ	44,0	57,5	11,1	24,6	38,1	52,0	19 . 43 . 5,6		B.
	β Aquilæ	12,6	26,2	39,7	53,1	6,9	20,2	19 . 47 . 34,0		B.
	α^2 Capricorni	53,8	7,4	20,9	34,6	48,7	2,4	20 . 9 . 16,2		B.
	Pallas (very faint)	......	......	48,8	2,4	16,2	29,7	20 . 39 . 43,6	− 13,49	B.
	β Aquarii	52,6	6,3	19,7	33,3	47,1	0,8	21 . 23 . 14,0		B.
	ε Pegasi	5,2	18,7	32,2	46,1	59,6	13,5	21 . 36 . 26,9		B.
	Uranus (hurried)	......	......	24,6	38,9	52,3	6,4	22 . 15 . 20,0	− 13,74	B.
	δ Aquarii	52,4	6,8	20,3	35,1	48,8	3,1	22 . 46 . 18,0		B.
	α Pegasi	32,3	46,2	59,8	14,1	28,0	42,0	22 . 56 . 55,7		B.
	(*a*) φ Aquarii	47,2	0,8	14,1	27,7	41,2	55,0	23 . 6 . 9,1		B.
	☽ 1 L.	6,9	20,8	34,8	49,0	3,0	17,1	23 . 20 . 31,0		B.
	p Piscium	14,6	28,1	41,3	54,8	8,4	21,9	23 . 50 . 35,4		B.
	s Piscium	53,9	7,7	20,9	34,7	48,1	2,0	23 . 57 . 15,5		B.
	Polaris (blazing)	36.52,8	45. 8,6	53.12,2	1.32,4	9.47,2	18. 3,2	1 . 26 . 20,4		B.
	Mars 2 L.	3,6	18,3	32,3	47,3	2,2	16,7	7 . 34 . 31,4		B.
	Jupiter 1 L. } (very faint)	30,8	......	58,9	......	27,2	......	8 . 54 . 55,8		B.
	Jupiter 2 L.	......	47,3	......	15,7	......	43,9	8 . 54		B.
	Venus 2 L. (unsteady)	9,1	22,8	36,7	50,6	4,6	18,8	9 . 9 . 32,5		B.
	α Hydræ	26,2	40,0	53,1	7,0	20,6	34,1	9 . 19 . 47,9		B.
	Regulus	32,1	45,9	59,5	13,6	27,4	41,3	9 . 59 . 54,9		B.
Sept. 24	☉ 1 L. } (great waving)	7,1	20,5	33,9	47,5	1,1	14,4	12 . 4 . 28,1		B.
	☉ 2 L.	15,3	29,0	42,3	56,0	9,5	22,9	12 . 6 . 36,4		B.
	Polaris SP. (very unsteady)	36. 6,8	44.25,2	52.40,6	0.53,4	9.15,8	17.18,6	13 . 25 . 35,2		B.
	Mercury 1 L. (hazy and indistinct)	......	......	......	......	44,2	57,9	13 . 37 . 12,1	− 27,73	B.
	Arcturus	3,7	17,9	31,6	46,4	0,7	15,0	14 . 8 . 29,3		B.
	α^2 Capricorni	52,3	6,4	19,9	33,7	47,5	1,9	20 . 9 . 15,4		B.
	Pallas (very faint)	28,1	41,7	55,1	9,0	22,5	36,1	20 . 39 . 49,4		B.
	β Aquarii	51,8	5,4	18,8	32,3	45,9	59,3	21 . 23 . 13,0		B.
	ε Pegasi (flaring)	3,9	17,7	31,0	44,6	58,3	12,1	21 . 36 . 26,0		B.
	Uranus	48,9	2,8	16,2	30,1	43,7	57,8	22 . 15 . 11,9		B.
	α Pegasi	31,2	44,9	58,8	12,9	26,9	40,7	22 . 56 . 54,6		B.
	φ Aquarii	45,8	59,7	13,1	26,9	40,2	54,2	23 . 6 . 7,6		B.
	(*b*) ☽ 1 L.	22,2	35,9	49,7	3,7	17,3	31,0	0 . 11 . 45,1		B.
	☽ 2 L.	33,4	47,9	1,0	15,1	28,9	42,9	0 . 13 . 56,8		B.
	δ Piscium	7,1	21,1	34,2	48,0	1,5	15,0	0 . 40 . 28,9		B.
	Polaris	36.49,4	45. 7,6	53. 9,4	1.32,4	9.46,6	18. 3,2	1 . 26 . 19,6		B.
Sept. 26	(*c*) ☉ 2 L.	......	38,3	51,4	5,3	19,0	32,3	12 . 13 . 46,0	− 6,74	B.
	ζ Aquilæ (cloudy)	44,4	58,7	12,1	25,9	39,7	53,7	18 . 58 . 7,8		B.
	δ Aquilæ (hazy)	7,2	20,4	33,8	47,2	1,1	14,7	19 . 17 . 28,3		B.
	γ Aquilæ	20,6	34,3	47,6	1,7	15,3	29,1	19 . 38 . 42,8		B.
	α Aquilæ	39,9	53,4	7,1	20,7	34,2	48,0	19 . 43 . 1,5		B.
	α Andromedæ	44,1	59,3	14,6	29,9	45,2	0,7	0 . 0 . 16,1		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
The Transit levelled, Sept. 26. 0^h.

(*a*) Confused: some wires marked doubtful.
(*b*) Correction applied for defect of illumination of 1 L. = $-0^s,02$.

(*c*) Very cloudy: dark glass not required.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
11 . 53 . 3,16		+ 7,51	7,46			0,72	22,06	11 . 54 . 29,88	⊙'s center.
11 . 55 . 11,45									
21 . 28 . 9,63			10,00					21 . 28 . 32,70	☽ 1 L.
22 . 56 . 15,74			15,78	38,47	22,69			22 . 56 . 38,53	α Pegasi.
13 . 0 . 54,23	3,46		14,88	40,04	25,16	0,81	22,78	1 . 1 . 38,10	Polaris SP.
17 . 6 . 47,46		+ 7,08	47,49	11,56	24,07	1,10	23,37	17 . 7 . 11,65	α Herculis.
17 . 26 . 56,50			56,55	20,78	24,23			17 . 27 . 20,72	α Ophiuchi.
18 . 57 . 29,80			29,83					18 . 57 . 54,07	ζ Aquilæ.
19 . 38 . 5,36			5,44					19 . 38 . 29,71	γ Aquilæ.
19 . 42 . 24,70			24,78	48,97	24,19			19 . 42 . 49,05	α Aquilæ.
19 . 46 . 53,24			53,34					19 . 47 . 17,62	β Aquilæ.
20 . 8 . 34,86			35,11	59,47	24,36			20 . 8 . 59,40	α^2 Capricorni.
20 . 39 . 2,65			2,76					20 . 39 . 27,08	Pallas.
21 . 22 . 33,40			33,61	57,98	24,37			21 . 22 . 57,96	β Aquarii.
21 . 35 . 46,00			46,08					21 . 36 . 10,44	ε Pegasi.
22 . 14 . 38,70			38,96					22 . 15 . 3,35	Uranus.
22 . 45 . 34,93			35,24					22 . 45 . 59,65	δ Aquarii.
22 . 56 . 14,01			14,04	38,47	24,43			22 . 56 . 38,46	α Pegasi.
23 . 5 . 27,87			28,09					23 . 5 . 52,52	φ Aquarii.
23 . 19 . 48,95			49,19					23 . 20 . 13,63	☽ 1 L.
23 . 49 . 54,93			55,12					23 . 50 . 19,58	p Piscium.
23 . 56 . 34,69			34,91					23 . 56 . 59,38	s Piscium.
1 . 1 . 33,83	24,31		14,26	40,26	26,00		24,47	1 . 1 . 38,78	Polaris.
7 . 33 . 47,40			47,36			1,19	24,44	7 . 34 . 12,18	Mars 2 L.
8 . 54 . 13,17			14,40					8 . 54 . 39,28	Jupiter's center.
8 . 54 . 15,63									
9 . 8 . 50,72			50,75					9 . 9 . 15,64	Venus 2 L.
9 . 19 . 6,99			7,22	32,27	25,05			9 . 19 . 32,12	α Hydræ.
9 . 59 . 13,53			13,58	38,56	24,98			9 . 59 . 38,51	Regulus.
12 . 3 . 47,52			51,87					12 . 5 . 16,91	⊙'s center.
12 . 5 . 55,91									
13 . 0 . 53,66	2,89		13,65	40,34	26,69			1 . 1 . 38,73	Polaris SP.
13 . 36 . 30,34			30,60					13 . 36 . 55,71	Mercury 1 L.
14 . 7 . 46,37			46,35	11,51	25,16			14 . 8 . 11,49	Arcturus.
20 . 8 . 33,87			34,12	59,46	25,34			20 . 8 . 59,56	α^2 Capricorni.
20 . 39 . 8,85			8,96					20 . 39 . 34,43	Pallas.
21 . 22 . 32,35			32,56	57,97	25,41			21 . 22 . 58,06	β Aquarii.
21 . 35 . 44,80			44,88					21 . 36 . 10,39	ε Pegasi.
22 . 14 . 30,20			30,46					22 . 14 . 56,00	Uranus.
22 . 56 . 12,86			12,89	38,47	25,58			22 . 56 . 38,47	α Pegasi.
23 . 5 . 26,79			27,01					23 . 5 . 52,60	φ Aquarii.
0 . 11 . 3,56			3,74				25,63	0 . 11 . 29,36	☽ 1 L.
0 . 13 . 15,14			15,32					0 . 13 . 40,96	☽ 2 L.
0 . 39 . 47,97			48,06					0 . 40 . 13,72	δ Piscium.
1 . 1 . 32,60	23,08		13,03	40,44	27,41			1 . 1 . 38,71	Polaris.
12 . 13 . 5,31		+ 6,54	5,44			1,37	27,09	12 . 13 . 33,23	⊙ 2 L.
18 . 57 . 26,04			26,05					18 . 57 . 54,22	ζ Aquilæ.
19 . 16 . 47,53			47,63					19 . 17 . 15,81	δ Aquilæ.
19 . 38 . 1,63			1,68					19 . 38 . 29,89	γ Aquilæ.
19 . 42 . 20,68			20,74	48,92	28,18			19 . 42 . 48,95	α Aquilæ.
23 . 59 . 29,99			29,86	58,36	28,50			23 . 59 . 58,32	α Andromedæ.

Error of Collimation = – 1″,0.
Level Error = – 3″,87. From Sept. 22. = – 3″,67.
Meridian Error from Sept. 23, by Polaris, Polaris SP., and Polaris, Sept. 23 and 24.
.... from Sept. 26, by Polaris, Sept. 26, and Polaris SP., Sept. 28, allowing $2^s,00$ for clock rate, and – $0^s,29$ for change of Æ.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	*m. s.*	*m. s.*	*m. s.*	*m. s.*	*m. s.*	*h. m. s.*	*m. s.*	
Sept. 26	Polaris...... (very cloudy)	36.49,8	45. 6,4	......	1.29,6	9.42,4	17.58,8	1	+ 3 . 17,38	B.
	☽ 2 L............ (cloudy)	21,2	35,1	49,2	3,3	17,2	31,2	1 . 52 . 45,2		B.
Sept. 27	Procyon...............	33,5	46,5	59,9	13,8	27,2	40,7	7 . 30 . 54,5		B.
	Pollux	2,1	16,8	32,1	47,7	3,0	18,1	7 . 35 . 33,7		B.
	Mars 2 L.............	48,2	2,7	16,8	31,6	46,3	0,8	7 . 44 . 15,5		B.
	Jupiter 1 L. } ..... (cloudy)	13,9	......	41,7	......	9,9	......	8 . 57 . 37,5		B.
	Jupiter 2 L. }	......	30,3	......	58,4	......	26,6	8 . 57		B.
	Venus 2 L.	52,4	6,3	19,7	34,0	47,9	1,8	9 . 24 . 15,7		B.
	(*a*) Regulus	27,1	40,8	54,1	8,2	22,0	35,8	9 . 59 . 49,8		B.
Sept. 28	(*a*) ⊙ 1 L................	26,7	40,1	53,3	7,1	20,6	34,1	12 . 18 . 47,5		B.
	⊙ 2 L................	35,7	49,0	2,1	15,9	29,1	42,4	12 . 20 . 56,0		B.
	(*a*) Polaris SP.	36. 4,8	44.21,8	52.37,2	0.51,8	9.12,6	17.16,6	13 . 25 . 32,8		B.
	(*a*) Arcturus.............	58,0	12,4	26,4	40,9	55,3	9,7	14 . 8 . 24,1		B.
	ζ Aquilæ	41,7	55,9	9,3	23,3	37,1	51,2	18 . 58 . 5,1		B.
	δ Aquilæ	4,5	18,1	31,2	44,9	58,2	11,9	19 . 17 . 25,4		B.
	Uranus	14,8	28,3	42,1	55,8	9,6	23,9	22 . 14 . 37,2		B.
	α Pegasi..............	26,0	39,7	53,4	7,7	21,5	35,4	22 . 56 . 49,5		B.
	Ceres	50,6	5,4	20,0	34,4	49,0	3,7	23 . 15 . 18,2		B.
	s Piscium............	47,7	1,3	14,9	28,4	42,1	55,4	23 . 57 . 8,9		B.
	(*b*) Polaris..............	36.42,4	44.59,8	53. 5,6	1.23,4	9.38,2	17.56,8	1 . 26 . 16,4		B.
Sept. 29	Venus 2 L... (very cloudy)	26,2	40,4	53,4	7,8	21,6	35,3	9 . 31 . 49,2		B.
Sept. 30	γ Aquilæ	16,4	30,1	42,9	57,2	11,4	25,0	19 . 38 . 38,4		B.
	α Aquilæ...... (blazing)	35,7	49,3	2,8	16,6	30,2	43,6	19 . 42 . 57,3		B.
	β Aquilæ............	4,5	18,1	30,9	45,1	58,4	12,2	19 . 47 . 25,7		B.
	α^2 Capricorni.........	45,2	59,1	12,9	26,8	40,6	54,4	20 . 9 . 8,3		B.
	(*c*) Pallas	48,7	2,1	15,2	28,8	42,2	56,0	20 . 39 . 9,6		B.
	β Aquarii............	44,7	58,3	11,6	25,2	38,9	52,4	21 . 23 . 6,1		B.
	ε Pegasi	57,2	10,7	24,0	37,8	51,4	5,3	21 . 36 . 18,8		B.
	Uranus .... (hurried)	......	......	......	......	54,9	8,4	22 . 14 . 22,2	– 27,56	B.
	δ Aquarii	44,4	58,6	12,3	26,7	40,9	55,1	22 . 46 . 9,1		B.
	Ceres .... (faint)	23,3	37,9	52,4	7,0	21,2	35,6	23 . 13 . 50,4		B.
	p Piscium...........	......	20,0	33,2	46,8	0,9	13,9	23 . 50 . 27,7	– 6,74	B.
	δ Piscium............	0,7	14,1	27,1	41,2	54,7	8,3	0 . 40 . 22,0		B.
	Polaris.. (flaring and unsteady)	36.45,6	45. 1,4	53. 8,2	1.29,4	9.45,6	17.58,8	1 . 26 . 13,4		B.
Oct. 1	β Aquarii	44,0	57,7	10,6	24,8	38,2	51,6	21 . 23 . 5,4		G.
	(*d*) α Aquarii............	10,7	24,2	37,5	51,0	4,2	17,9	21 . 57 . 31,3		G.
	α Pegasi.............	23,7	37,7	51,5	5,3	18,9	33,0	22 . 56 . 47,0		C.
Oct. 2	☽ 2 L...............	48,5	4,3	19,4	35,2	50,7	6,3	7 . 10 . 21,8		B.
Oct. 3	α Aquilæ	33,4	47,2	0,7	14,4	28,2	42,0	19 . 42 . 55,3		B.
	β Aquilæ	2,8	16,1	29,5	42,9	57,1	10,2	19 . 47 . 23,7		B.
	α^2 Capricorni.........	43,0	57,2	11,2	24,8	38,9	52,2	20 . 9 . 6,1		B.
	(*e*) Pallas	46,3	......	15,2	......	40,7	53,8	20 . 38	+ 3,34	B.
	β Aquarii..............	43,1	56,0	9,9	23,2	37,0	50,4	21 . 23 . 3,9		B.
	Uranus	37,7	51,2	5,3	18,8	32,9	46,2	22 . 14 . 0,1		B.
	α Pegasi	22,2	36,3	50,4	4,2	18,5	32,0	22 . 56 . 45,8		B.
	Ceres .... (very faint)	18,1	32,8	47,2	1,6	16,3	30,6	23 . 11 . 45,2		B.
	α Andromedæ	38,2	53,3	9,0	24,1	39,9	54,5	0 . 0 . 10,1		B.
	Polaris .... (flaring)	36.48,6	45. 5,8	53.21,4	1.36,2	9.57,6	18. 2,8	1 . 26 . 18,6		B.

ILLUMINATED END OF AXIS WEST. Order of Wires for Stars above the Pole, *GFEDCBA*.
From Oct. 3............... EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit reversed and levelled, Oct. 3. 3^h.

(*a*) These observations cloudy.
(*b*) Cloudy with very great motion: the observation is not satisfactory.
(*c*) Barely visible.
(*d*) Disturbed: wires III. and IV. marked doubtful.
(*e*) Extremely faint: all the wires doubtful.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
1. 1.30,78	21,26	+ 6,54	11,97	40,91	28,94	1,37	28,46	1. 1.40,49	Polaris.
1.52. 3,20			3,25					1.52.31,82	☽ 2 L.
7.30.13,73		+ 6,32	13,80	44,12	30,32	1,12	29,92	7.30.44,07	Procyon.
7.34.47,65			47,50	17,89	30,39			7.35.17,77	Pollux.
7.43.31,70			31,63					7.44. 1,91	Mars 2 L.
8.56.55,75			57,06					8.57.27,40	Jupiter's center.
8.56.58,43									
9.23.33,97			33,99					9.24. 4,35	Venus 2 L.
9.59. 8,26			8,28	38,64	30,36			9.59.38,67	Regulus.
12.18. 7,06			11,54					12.19.42,03	⊙'s center.
12.20.15,74									
13. 0.51,09	0,32		9,93	41,32	31,39			1. 1.40,46	Polaris SP.
14. 7.40,97			40,92	11,49	30,57			14. 8.11,50	Arcturus.
18.57.23,37			23,37					18.57.54,18	ζ Aquilæ.
19.16.44,89			44,98					19.17.15,80	δ Aquilæ.
22.13.55,96			56,17					22.14.27,13	Uranus.
22.56. 7,60			7,60	38,47	30,87			22.56.38,59	α Pegasi.
23.14.34,47			34,77					23.15. 5,78	Ceres.
23.56.28,39			28,57					23.56.59,61	s Piscium.
1. 1.26,09	16,57		7,60	41,47	33,87		31,04	1. 1.38,69	Polaris.
9.31. 7,70			7,72			0,74	31,75	9.31.39,76	Venus 2 L.
19.37.57,35			57,39					19.38.29,75	γ Aquilæ.
19.42.16,50			16,55	48,86	32,31			19.42.48,91	α Aquilæ.
19.46.44,99			45,05					19.47.17,41	β Aquilæ.
20. 8.26,76			26,97	59,37	32,40			20. 8.59,34	α^2 Capricorni.
20.38.28,95			29,04					20.39. 1,43	Pallas.
21.22.25,31			25,48	57,92	32,44			21.22.57,89	β Aquarii.
21.35.37,89			37,94					21.36.10,36	ϵ Pegasi.
22.13.40,94			41,15					22.14.13,58	Uranus.
22.45.26,73			26,99					22.45.59,44	δ Aquarii.
23.13. 6,83			7,13					23.13.39,59	Ceres.
23.49.47,01			47,15					23.50.19,64	p Piscium.
0.39.41,15			41,20				32,49	0.40.13,71	δ Piscium.
1. 1.28,91	19,39		10,42	41,96	31,54			1. 1.42,94	Polaris.
21.22.24,61			24,78	57,91	33,13	0,65	32,54	21.22.57,90	β Aquarii.
21.56.50,97			51,09	24,24	33,15			21.57.24,22	α Aquarii.
22.56. 5,30			5,30	38,45	33,15			22.56.38,46	α Pegasi.
7. 9.35,17			35,04			0,64	33,52	7.10. 8,75	☽ 2 L.
19.42.14,46		+ 11,62	14,74	48,81	34,07			19.42.48,79	α Aquilæ.
19.46.43,18			43,47					19.47.17,52	β Aquilæ.
20. 8.24,77			25,27	59,33	34,06			20. 8.59,32	α^2 Capricorni.
20.38.27,34			27,68					20.39. 1,75	Pallas.
21.22.23,36			23,81	57,89	34,08			21.22.57,90	β Aquarii.
22.13.18,89			19,40					22.13.53,51	Uranus.
22.56. 4,20			4,41	38,45	34,04			22.56.38,54	α Pegasi.
23.11. 1,68			2,30					23.11.36,44	Ceres.
23.59.24,16			24,16	58,39	34,23			23.59.58,32	α Andromedæ.
1. 1.35,86	25,47		8,97	42,41	33,44		34,16	1. 1.43,16	Polaris.

Error of Collimation = − 1″,0. From Oct. 3. = − 1″,8.

Level Error = − 3″,67. From Oct. 3. = − 3″,13.

The consecutive transits of Polaris, Sept. 28, give 5″,72, allowing 0^s,57 for clock rate and change of RA; and Polaris SP., Sept. 28, with Polaris, Sept. 30, gives 6″,92, allowing 1^s,27 for clock rate and change of RA. The mean of these is used from Sept. 27, the observation of Polaris, Sept. 28, not appearing quite satisfactory.

The three sets of three consecutive transits of Polaris, Oct. 3, 4, and 5, give for Meridian Error respectively 11″,59, 11″,65, 11″,42. The mean of the 1st and 2nd is used from Oct. 3, and the mean of the 2nd and 3rd from Pollux, Oct. 4.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Oct. 3	Procyon	28,8	42,4	55,9	9,4	23,1	36,4	7 . 30 . 50,1		B.
	Pollux	57,7	13,2	28,2	43,8	59,2	14,2	7 . 35 . 29,6		B.
	Mars 2 L. .... (hazy)	4,7	19,4	34,6	49,2	3,6	18,2	7 . 58 . 32,6		B.
	☽ 2 L. .... (ragged)	14,2	29,2	44,4	0,0	15,3	30,3	8 . 4 . 45,6		B.
	γ Cancri	30,3	44,9	59,9	14,1	28,8	43,0	8 . 33 . 57,6		B.
	Jupiter 1 L.	9,4	......	37,7	......	6,3	......	9 . 1 . 34,1		B.
	Jupiter 2 L.	......	25,9	......	54,4	......	22,6	9 . 1		B.
	Venus 2 L.	53,3	7,4	21,3	34,8	49,1	2,7	9 . 47 . 16,3		B.
	Regulus } .... (cloudy)	......	......	......	......	18,0	31,7	9 . 59 . 45,4	– 27,67	B.
	β Leonis }	......	......	......	......	21,8	35,2	11 . 40 . 48,7	– 27,99	B.
Oct. 4	⊙ 1 L.	6,9	20,3	34,1	47,4	1,3	14,9	12 . 40 . 28,3		B.
	⊙ 2 L.	16,2	29,9	43,1	56,8	10,9	23,7	12 . 42 . 37,2		B.
	(*a*) Polaris SP.	35.59,4	44.15,8	52.17,4	0.39,6	8.55,8	17. 9,4	13 . 25 . 26,6		B.
	α Aquilæ	33,6	46,5	0,3	14,1	28,1	40,8	19 . 42 . 54,9		B.
	β Aquilæ	1,9	15,4	29,1	42,3	56,2	9,4	19 . 47 . 23,1		B.
	α^2 Capricorni	42,4	56,2	10,1	24,1	37,9	51,6	20 . 9 . 5,6		B.
	β Aquarii	42,7	55,8	8,9	23,2	36,9	50,1	21 . 23 . 3,3		B.
	Uranus	30,6	44,3	58,1	11,9	26,0	39,3	22 . 13 . 53,2		B.
	α Pegasi	21,6	35,7	49,7	3,5	17,7	31,2	22 . 56 . 45,0		B.
	α Andromedæ	37,9	52,9	8,5	23,4	39,1	53,9	0 . 0 . 9,4		B.
	Polaris ...... (very unsteady)	36.45,4	45. 4,2	53.18,6	1.37,2	9.57,2	18. 1,4	1 . 26 . 17,6		B.
	Pollux	57,2	12,7	27,9	43,3	58,9	13,8	7 . 35 . 29,0		B.
	Mars 2 L.	25,9	40,6	54,7	9,4	23,6	38,2	8 . 0 . 52,5		B.
	γ Cancri	29,9	44,5	58,9	13,6	28,3	42,4	8 . 33 . 57,2		B.
	☽ 2 L.	9,9	24,9	39,7	54,6	10,0	24,4	8 . 57 . 39,3		B.
	Jupiter 1 L.	47,3	......	15,7	......	44,1	......	9 . 2 . 12,2		B.
	Jupiter 2 L.	......	4,1	......	32,3	......	0,9	9 . 2		B.
	α Hydræ .... (clouds)	......	30,1	44,0	57,3	11,1	......	9 . 19	+ 6,76	B.
	Venus 2 L.	49,1	2,7	16,6	30,4	44,3	57,8	9 . 51 . 12,0		B.
	Regulus	21,9	35,8	49,6	3,6	17,9	31,1	9 . 59 . 44,8		B.
Oct. 5	⊙ 1 L. } .... (steady)	44,8	58,7	12,2	25,9	39,7	52,9	12 . 44 . 6,2		B.
	⊙ 2 L. }	54,3	8,0	21,3	34,9	48,8	2,1	12 . 46 . 15,9		B.
	Polaris SP. .... (cloudy and unsteady)	35.58,4	......	52.17,2	0.40,6	8.53,4	17.11,8	13 . 25 . 21,6	– 2 . 44, 4	B.
	Arcturus .... (flaring)	53,2	7,4	21,7	36,2	50,7	4,8	14 . 8 . 19,1		B.
	β Aquilæ ... (very cloudy)	......	......	......	42,0	55,8	9,1	19 . 47	– 13,60	B.
	(*b*) α^2 Capricorni	42,0	56,0	9,7	24,1	......	51,2	20 . 9 . 5,1	+ 2,33	B.
	β Aquarii .... (cloudy)	41,3	55,0	......	22,1	36,1	49,3	21 . 23 . 2,9	– 2,26	B.
	Uranus	24,1	37,3	51,0	5,1	19,2	32,0	22 . 13 . 46,2		B.
	α Pegasi	21,1	35,1	49,0	2,9	17,2	30,6	22 . 56 . 44,9		B.
	α Andromedæ	37,3	52,3	8,0	23,0	38,4	53,4	0 . 0 . 9,1		B.
	Polaris ... (clouds, unsteady)	36.42,4	44.57,6	53. 9,2	1.35,8	9.56,4	18. 1,6	1 . 26 . 17,2		B.
Oct. 6	Venus 2 L. .... (very hazy)	42,7	56,6	10,6	24,4	38,9	52,2	9 . 59 . 5,8		B.
Oct. 9	Polaris SP. ...... (cloudy)	35.55,8	44.12,6	52.16,8	0.38,2	8.52,4	17. 8,8	13 . 25 . 24,6		B.
Oct. 10	⊙ 1 L. } .... (cloudy)	......	......	27,9	41,9	55,7	9,0	13 . 2 . 22,4	– 13,61	B.
	⊙ 2 L. }	10,3	24,1	37,9	51,3	5,3	18,3	13 . 4 . 32,1		B.
	Arcturus .... (clouds)	49,1	3,7	17,8	32,3	46,9	1,0	14 . 8 . 14,9		B.
	α^2 Capricorni	38,0	52,0	5,8	19,7	33,7	47,2	20 . 9 . 1,0		C.
	β Aquarii	37,4	51,0	4,6	18,0	31,8	45,3	21 . 22 . 58,8		C.
	(*c*) Venus 2 L. ...... (cloudy)	43,2	......	10,9	24,2	38,7	......	10 . 15 . 5,8		B.
	Polaris SP. (cloudy & unsteady)	35.55,2	44.11,8	52.15,6	0.38,0	8.50,8	17. 8,2	13 . 25 . 24,0		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.

(*a*) Difficult observation: too much motion.
(*b*) Cloudy: not used for clock rate.
(*c*) The wind so loud, the clock could not be heard.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
7.30. 9,45		+11,62	9,76	44,30	34,54	0,60	34,19	7.30.44,14	Procyon.
7.34.43,70			43,69	18,09	34,40			7.35.18,07	Pollux.
7.57.48,90			49,01					7.58.23,40	Mars 2 L.
8: 3.59,85			59,91					8. 4.34,30	☽ 2 L.
8.33.14,08			14,19					8.33.48,59	γ Cancri.
9. 0.51,88			53,26					9. 1.27,67	Jupiter's center.
9. 0.54,30									
9.46.34,99			35,22					9.47. 9,65	Venus 2 L.
9.59. 4,03			4,25	38,77	34,52			9.59.38,69	Regulus.
11.40. 7,24			7,43	41,99	34,56			11.40.41,91	β Leonis.
12.39.47,60			52,62					12.41.27,13	⊙'s center.
12.41.56,83									
13. 0.40,57	50,71		8,37	42,43	34,06			1. 1.42,89	Polaris SP.
19.42.14,04			14,32	48,80	34,48			19.42.49,00	α Aquilæ.
19.46.42,48			42,77					19.47.17,45	β Aquilæ.
20. 8.23,99			24,49	59,31	34,82			20. 8.59,18	α^2 Capricorni.
21.22.22,98			23,42	57,88	34,46			21.22.58,14	β Aquarii.
22.13.11,91			12,42					22.13.47,16	Uranus.
22.56. 3,48			3,69	38,44	34,75			22.56.38,45	α Pegasi.
23.59.23,58			23,58	58,39	34,81			23.59.58,37	α Andromedæ.
1. 1.34,51	24,12		7,62	42,45	34,83		34,79	1. 1.42,44	Polaris.
7.34.43,25		+11,53	43,24	18,12	34,88	0,51	34,76	7.35.18,16	Pollux.
8. 0. 9,28			9,39					8. 0.44,32	Mars 2 L.
8.33.13,54			13,65					8.33.48,59	γ Cancri.
8.56.54,68			54,79					8.57.29,74	☽ 2 L.
9. 1.29,83			31,29					9. 2. 6,24	Jupiter's center.
9. 1.32,43									
9.18.57,38			57,83	32,52	34,69			9.19.32,79	α Hydræ.
9.50.30,41			30,64					9.51. 5,61	Venus 2 L.
9.59. 3,53			3,75	38,79	35,04			9.59.38,72	Regulus.
12.43.25,79			30,84					12.45. 5,87	⊙'s center.
12.45.35,04									
13. 0.38,89	49,03		6,56	42,46	35,90			1. 1.41,60	Polaris SP.
14. 7.36,16			36,28	11,46	35,18			14. 8.11,34	Arcturus.
19.46.42,03			42,31					19.47.17,49	β Aquilæ.
20. 8.23,68			24,17	59,30	35,13			20. 8.59,36	α^2 Capricorni.
21.22.22,19			22,63	57,87	35,24			21.22.57,84	β Aquarii.
22.13. 4,99			5,49					22.13.40,72	Uranus.
22.56. 2,97			3,18	38,44	35,26			22.56.38,43	α Pegasi.
23.59.23,07			23,07	58,39	35,32			23.59.58,34	α Andromedæ.
1. 1.31,46	21,07		4,70	42,46	37,76		35,27	1. 1.39,99	Polaris.
9.58.24,46			24,71			0,54	35,78	9.59. 0,71	Venus 2 L.
13. 0.38,46		+10,03	3,54	42,51	38,97	0,76	38,63	1. 1.42,58	Polaris SP.
13. 1.41,77			46,91					13. 3.25,96	⊙'s center.
13. 3.51,33									
14. 7.32,24			32,31	11,45	39,14			14. 8.11,39	Arcturus.
20. 8.19,63			20,03	59,22	39,19			20. 8.59,30	α^2 Capricorni.
21.22.18,13			18,49	57,81	39,32			21.22.57,80	β Aquarii.
10.14.24,56			24,75			1,02	39,14	10.15. 4,32	Venus 2 L.
13. 0.37,66	47,49		2,74	42,60	39,86			1. 1.42,43	Polaris SP.

Error of Collimation = − 1″,8.

Level Error = − 3″,13. From Oct. 6. = − 2″,96.

Meridian Error from Oct. 9, by Polaris SP., Polaris, and Polaris SP., Oct. 10 and 11.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Oct. 11	(a) ⊙ 1 L. } .... (clouds)	41,2	54,7	8,2	21,8	35,8	49,0	13 . 6 . 2,8		B.
	⊙ 2 L. }	51,1	4,8	18,3	31,8	46,1	59,1	13 . 8 . 13,0		B.
	α Ophiuchi	58,8	12,6	26,7	40,3	54,3	7,9	17 . 27 . 21,6		B.
	(b) α Aquilæ	......	......	......	9,2	22,2	36,1	19 . 42 . 49,2	− 20,45	B.
	β Aquilæ............	56,6	10,1	23,3	36,8	50,1	4,2	19 . 47 . 17,6		B.
	α² Capricorni.........	37,3	51,2	5,2	18,9	33,0	46,2	20 . 9 . 0,4		B.
	β Aquarii.............	36,9	50,2	4,0	17,6	30,9	44,4	21 . 22 . 58,4		B.
	Uranus	45,3	58,8	12,8	26,3	40,3	53,7	22 . 13 . 7,5		B.
	α Pegasi..............	16,6	30,5	44,1	58,2	12,3	25,9	22 . 56 . 39,7		B.
	Ceres .... (very faint)	30,9	45,3	0,1	14,2	29,1	43,6	23 . 6 . 57,0		B.
	(c) Andromedæ..........	32,2	47,2	2,9	17,8	33,3	48,3	0 . 0 . 4,0		B.
	Polaris ...... (very cloudy)	36.36,4	44.56,2	53.13,6	1.26,8	......	......	1	+ 12 . 23,32	B.
	Jupiter 1 L.	58,9	......	27,2	......	55,9	......	9 . 6 . 23,9		B.
	Jupiter 2 L.	......	15,6	......	44,1	......	12,1	9 . 6		B.
	α Hydræ	10,8	24,4	38,0	51,7	5,8	18,9	9 . 19 . 32,4		B.
	Regulus	16,8	30,6	44,6	58,3	12,2	25,7	9 . 59 . 39,4		B.
	(d) Venus 2 L.	45,2	59,1	12,7	26,7	40,5	53,8	10 . 19 . 7,6		B.
	(d) β Leonis	19,1	33,2	47,0	1,3	15,3	29,1	11 . 40 . 43,0		B.
	(d) Polaris SP............	35.55,8	44. 9,4	52.13,8	0.36,4	......	17. 6,2	13 . 25 . 24,4	+ 1 . 22,40	B.
Oct. 12	(d) ⊙ 1 L.	21,9	35,5	49,0	2,9	16,6	30,1	13 . 9 . 43,5		B.
	⊙ 2 L.	32,0	45,7	59,3	12,9	27,0	40,3	13 . 11 . 54,0		B.
	(e) Mars 2 L.	33,4	47,7	2,6	17,3	31,7	45,8	8 . 19 . 0,7		B.
	β Leonis	18,8	32,4	46,9	0,5	14,8	28,3	11 . 40 . 42,2		B.
	Polaris SP... (very unsteady)	35.53,8	44. 9,2	52.14,6	0.37,2	8.50,4	17. 8,6	13 . 25 . 25,2		B.
Oct. 13	⊙ 1 L. } ... (cloudy, unsteady)	3,3	17,1	30,5	44,3	58,2	11,7	13 . 13 . 25,1		B.
	⊙ 2 L. }	14,1	27,3	41,0	54,8	8,4	21,9	13 . 15 . 35,3		B.
	Arcturus .... (very cloudy)	......	......	......	......	44,4	58,4	14 . 8 . 12,9	− 28,72	B.
	α Herculis	47,7	1,6	15,7	29,3	43,6	57,2	17 . 7 . 11,2		B.
	α Ophiuchi	56,9	11,1	24,9	38,7	52,7	6,3	17 . 27 . 19,9		B.
	α Aquilæ...... (blazing)	25,8	39,5	53,4	7,1	20,6	34,7	19 . 42 . 47,3		B.
	β Aquilæ............	54,5	8,2	21,6	34,9	48,9	2,2	19 . 47 . 16,0		B.
	α² Capricorni...... (clouds)	35,4	49,4	3,3	17,2	31,4	44,6	20 . 8 . 58,3		B.
	β Aquarii	35,0	48,5	2,1	15,7	29,3	42,9	21 . 22 . 56,3		B.
	Uranus	33,3	47,3	1,0	14,6	28,6	42,1	22 . 12 . 55,6		B.
	α Pegasi......... (blur)	14,7	28,9	42,7	56,4	10,0	24,2	22 . 56 . 38,1		B.
	Polaris	36.37,2	44.54,6	53.10,2	1.26,4	9.49,2	17.54,4	1 . 26 . 10,8		B.
	Jupiter 1 L.	6,3	......	34,9	......	3,0	......	9 . 7 . 30,9		B.
	Jupiter 2 L.	......	23,1	......	51,1	......	19,5	9 . 7		B.
	α Hydræ.............	9,2	23,0	36,4	50,0	4,1	17,2	9 . 19 . 30,8		B.
	Regulus	15,1	19,0	42,6	56,5	10,5	24,2	9 . 59 . 37,9		B.
	Venus 2 L.	51,8	5,9	19,4	33,3	47,0	0,6	10 . 27 . 14,1		B.
	β Leonis	17,6	31,7	45,6	59,4	13,5	27,4	11 . 40 . 41,4		B.
	Polaris SP... (very cloudy)	35.52,8	44. 9,6	52.12,4	......	8.50,4	......	13 . 25 . 25,0	+ 3 . 18,15	B.
Oct. 14	⊙ 1 L. } ...... (very cloudy)	44,8	59,3	12,9	......	40,3	......	13 . 17 . 7,1	+ 5,46	B.
	⊙ 2 L. }	55,4	9,1	23,0	......	50,7	4,1	13 . 19 . 18,0		B.
	Arcturus	45,6	0,3	14,8	29,1	43,7	57,4	14 . 8 . 12,1		B.
Oct. 15	α Ophiuchi .. (very cloudy)	55,8	9,5	23,3	37,0	51,0	......	17 . 26	+ 13,80	B.
	☽ 1 L.	21,1	37,0	53,0	8,8	24,9	40,5	17 . 54 . 56,1		B.
	α Aquilæ	24,2	38,0	51,6	5,3	19,1	32,1	19 . 42 . 45,9		B.
	β Aquilæ............	52,8	6,5	20,0	33,5	47,3	1,0	19 . 47 . 14,4		B.
	α² Capricorni	34,0	47,7	1,8	15,6	29,6	43,1	20 . 8 . 57,0		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, Oct. 11. 1^h.

(a) Wind too loud.
(b) Confused by the clock's light failing.
(c) Not good: blazing, then cloudy.

(d) All these very unsteady. The 5th wire of Polaris omitted to observe the Sun.
(e) The wind was very loud during this observation and all following to the end of Oct. 13.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0ʰ.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
13. 5.21,93 13. 7.32,03		+ 10,03	27,34			1,02	39,14	13. 7. 7,04	⊙'s center.
17.26.40,31			40,47	20,48	40,01			17.27.20,35	α Ophiuchi.
19.42. 8,72			8,92	48,69	39,77			19.42.48,90	α Aquilæ.
19.46.36,96			37,18					19.47.17,16	β Aquilæ.
20. 8.18,89			19,29	59,21	39,92			20. 8.59,29	α^2 Capricorni.
21.22.17,49			17,85	57,80	39,95			21.22.57,90	β Aquarii.
22.12.26,39			26,80					22.13. 6,88	Uranus.
22.55.58,19			58,34	38,41	40,07			22.56.38,45	α Pegasi.
23. 6.14,31			14,82					23. 6.54,94	Ceres.
23.59.17,96			17,93	58,39	40,46			23.59.58,09	α Andromedæ.
1. 1.26,57	16,51		2,27	42,66	40,39		40,16	1. 1.42,47	Polaris.
9. 5.41,47 9. 5.43,93			42,81			0,95	40,27	9. 6.23,44	Jupiter's center.
9.18.51,71			52,08	32,70	40,62			9.19.32,72	α Hydræ.
9.58.58,23			58,39	38,96	40,57			9.59.39,05	Regulus.
10.18.26,52			26,71					10.19. 7,39	Venus 2 L.
11.40. 1,14			1,27	42,12	40,85			11.40.42,00	β Leonis.
13. 0.36,73	46,56		1,81	42,71	40,90			1. 1.42,59	Polaris SP.
13. 9. 2,78 13.11.13,03			8,27					13.10.49,06	⊙'s center.
8.18.17,03		+ 9,80	17,08			0,88	40,99	8.18.58,37	Mars 2 L.
11.40. 0,55			0,67	42,14	41,47			11.40.42,09	β Leonis.
13. 0.37,00	46,83		1,73	42,82	41,09			1. 1.43,20	Polaris SP.
13.12.44,31 13.14.54,69			49,85					13.14.31,32	⊙'s center.
14. 7.29,85			29,89	11,45	41,56			14. 8.11,40	Arcturus.
17. 6.29,48			29,59	11,24	41,65			17. 7.11,21	α Herculis.
17.26.38,65			38,79	20,46	41,67			17.27.20,42	α Ophiuchi.
19.42. 6,92			7,10	48,65	41,55			19.42.48,81	α Aquilæ.
19.46.35,19			35,39					19.47.17,10	β Aquilæ.
20. 8.17,09			17,48	59,18	41,70			20. 8.59,21	α^2 Capricorni.
21.22.15,69			16,03	57,77	41,74			21.22.57,80	β Aquarii.
22.12.14,64			15,03					22.12.56,83	Uranus.
22.55.56,43			56,55	38,39	41,84			22.56.38,38	α Pegasi.
1. 1.26,11	15,48		1,56	42,89	41,33		41,87	1. 1.43,47	Polaris.
9. 6.48,77 9. 6.51,23			50,08			0,86	41,99	9. 7.32,40	Jupiter's center.
9.18.50,10			50,45	32,75	42,30			9.19.32,77	α Hydræ.
9.58.56,54			56,68	39,01	42,33			9.59.39,03	Regulus.
10.26.33,16			33,34					10.27.15,70	Venus 2 L.
11.39.59,52			59,63	42,15	42,52			11.40.42,04	β Leonis.
13. 0.36,19	46,56		1,46	42,92	41,46			1. 1.43,91	Polaris SP.
13.16.26,34 13.18.36,72			31,87					13.18.14,33	⊙'s center.
14. 7.29,00			29,04	11,45	42,41			14. 8.11,54	Arcturus.
17.26.37,12		+ 10,0	37,27	20,43	43,16	0,84	42,53	17.27.20,41	α Ophiuchi.
17.54. 8,78			9,35					17.54.52,50	☽ 1 L.
19.42. 5,17			5,36	48,62	43,26			19.42.48,58	α Aquilæ.
19.46.33,64			33,85					19.47.17,07	β Aquilæ.
20. 8.15,54			15,94	59,15	43,21			20. 8.59,17	α^2 Capricorni.

Error of Collimation = – 1″,8.

Level Error = – 2″,96. From Oct. 13. = – 3″,25.

Meridian Error from Mars, Oct. 12, by Polaris SP., Polaris, and Polaris SP., Oct. 12 and 13.

.... from Oct. 15, by Polaris SP., Oct. 16, compared with Polaris, Oct. 19, allowing + 2ˢ,68 for loss of clock, and + 0ˢ,37 for change of Æ.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Oct. 15	Pallas .... (very faint)	......	......	53,2	7,1	20,2	34,3	20 . 40 . 47,3	−13,49	B.
	β Aquarii	33,4	47,1	0,8	14,2	27,9	40,9	21 . 22 . 55,0		B.
	Uranus	22,1	35,8	49,7	3,5	17,3	30,9	22 . 12 . 45,1		B.
	α Pegasi	13,3	27,1	40,9	55,0	9,0	22,6	22 . 56 . 36,4		B.
	Ceres .... (faint)	35,8	50,5	5,1	19,2	34,0	48,2	23 . 5 . 2,9		B.
Oct. 16	Polaris SP. (cloudy, unsteady)	......	......	......	0.32,2	8.46,8	17. 1,6	13 . 25 . 21,4	− 12 . 23,60	B.
Oct. 17	⊙ 1 L. .... (unsteady)	54,3	8,0	21,8	35,3	49,2	2,6	13 . 28 . 16,2		B.
	⊙ 2 L.	5,3	18,9	32,6	46,3	0,4	13,7	13 . 30 . 27,3		B.
	Arcturus	43,4	57,7	12,3	26,5	41,1	54,9	14 . 8 . 9,5		B.
	α Herculis	44,2	58,2	12,2	26,0	40,2	53,7	17 . 7 . 7,7		B.
	α Ophiuchi	53,7	7,7	21,5	35,2	49,3	2,9	17 . 27 . 16,7		B.
Oct. 18	☽ 1 L. ....(cloudy)	29,9	44,6	59,9	14,9	30,4	44,9	21 . 8 . 59,9		B.
	β Aquarii	30,4	44,1	58,0	11,2	25,0	37,8	21 . 22 . 52,0		B.
	γ Capricorni	33,3	47,2	1,7	15,8	30,2	43,8	21 . 30 . 58,0		B.
	δ Capricorni	32,5	46,9	0,9	14,8	29,1	43,2	21 . 37 . 57,1		B.
	α Aquarii	57,0	10,5	24,1	37,5	51,1	4,7	21 . 57 . 18,4		B.
	Uranus .... (cloud)	6,3	19,9	33,7	47,2	1,3	15,4	22 . 12 . 28,6		B.
	Venus 2 L. (very cloudy)	......	......	......	1,5	15,3	28,7	10 . 47 . 42,4	− 20,47	B.
	Polaris SP.	35.47,6	44. 5,2	......	0.32,8	8.47,2	......	13	+ 8 . 14,91	B.
Oct. 19	⊙ 1 L.	22,5	36,2	50,0	3,7	17,8	31,2	13 . 35 . 45,0		B.
	⊙ 2 L.	33,9	47,5	1,4	15,1	28,9	42,7	13 . 37 . 56,1		B.
	Arcturus	41,1	55,4	10,0	24,2	38,8	53,1	14 . 8 . 7,3		B.
	α Aquilæ	20,1	34,0	47,7	1,1	15,0	28,2	19 . 42 . 42,1		B.
	β Aquilæ	48,9	2,7	16,0	29,7	43,4	57,0	19 . 47 . 10,6		B.
	α^2 Capricorni	29,8	43,7	57,7	11,6	25,9	39,2	20 . 8 . 53,1		B.
	β Aquarii	29,3	42,8	56,9	10,2	23,8	37,1	21 . 22 . 50,8		B.
	γ Capricorni	32,1	46,5	0,3	14,8	29,1	42,9	21 . 30 . 57,1		B.
	δ Capricorni	31,8	45,6	59,7	13,9	28,0	41,8	21 . 37 . 56,1		B.
	α Andromedæ	25,1	40,3	55,7	11,0	26,4	41,4	23 . 59 . 56,8		B.
	Polaris......... (blazing)	36.29,4	44.47,8	53. 2,2	1.19,4	9.42,6	17.45,8	1 . 26 . 7,4		B.
	Mars 2 L.	35,5	49,8	4,7	18,6	33,4	47,4	8 . 34 . 1,6		B.
	Jupiter 1 L.	15,9	......	43,9	......	12,3	......	9 . 10 . 40,2		B.
	Jupiter 2 L.	......	32,4	......	0,8	......	28,7	9 . 10		B.
	α Hydræ	3,7	17,4	30,9	44,7	58,5	11,9	9 . 19 . 25,6		B.
	Regulus	9,7	23,2	37,1	51,1	4,9	18,6	9 . 59 . 32,4		B.
	Venus 2 L.	28,1	41,5	55,3	9,1	22,8	36,2	10 . 51 . 49,6		B.
	(*a*) β Leonis	12,3	26,4	40,4	54,1	8,5	22,1	11 . 40 . 36,0		B.
	Polaris SP.	35.38,8	44. 3,4	52. 8,4	0.30,8	......	16.58,8	13 . 25 . 18,6	+ 1 . 22,44	B.
Oct. 20	⊙ 1 L.	7,7	21,4	35,2	49,0	2,8	16,3	13 . 39 . 30,0		B.
	⊙ 2 L.	19,1	33,0	46,8	0,4	14,2	27,7	13 . 41 . 41,1		B.
	(*b*) Arcturus	40,3	54,5	9,2	23,3	38,2	52,0	14 . 8 . 6,4		B.
	α Ophiuchi	50,5	4,4	18,3	31,9	46,1	59,7	17 . 27 . 13,2		B.
	α Aquilæ	19,0	33,0	47,1	59,9	13,9	27,2	19 . 42 . 40,9		B.
	β Aquilæ	47,7	1,5	15,0	28,7	42,3	55,7	19 . 47 . 9,1		B.
	α^2 Capricorni	28,8	42,6	56,7	10,4	24,4	38,0	20 . 8 . 51,8		B.
	β Aquarii	28,2	42,1	55,6	9,0	22,8	36,0	21 . 22 . 49,5		B.
	☽ 1 L.	59,7	14,0	28,0	42,3	56,6	10,2	23 . 0 . 25,1		B.
	α Andromedæ	24,1	39,4	54,6	9,9	25,5	40,4	23 . 59 . 55,8		B.
	Mars 2 L.	40,5	54,4	9,0	23,5	......	......	8. 34	+ 21,56	G.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, Oct. 17. 1^h.

(*a*) Disturbed: wires II. and III. marked doubtful.

(*b*) Cloudy, with very great motion.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
20 . 40 . 6,93		+ 10,0	7,21			0,84	42,53	20 . 40 . 50,46	Pallas.
21 . 22 . 14,19			14,54	57,75	43,21			21 . 22 . 57,82	β Aquarii.
22 . 12 . 3,48			3,88					22 . 12 . 47,19	Uranus.
22 . 55 . 54,90			55,03	38,38	43,35			22 . 56 . 38,36	α Pegasi.
23 . 4 . 19,39			19,90					23 . 5 . 3,24	Ceres.
13 . 0 . 31,90	42,27		57,47	42,90	45,43	0,98	44,31	1 . 1 . 42,31	Polaris SP.
13 . 27 . 35,34 13 . 29 . 46,36			41,21					13 . 29 . 26,07	☉'s center.
14 . 7 . 26,49			26,54	11,45	44,91			14 . 8 . 11,43	Arcturus.
17 . 6 . 26,03			26,15	11,18	45,03			17 . 7 . 11,16	α Herculis.
17 . 26 . 35,29			35,44	20,40	44,96			17 . 27 . 20,46	α Ophiuchi.
21 . 8 . 14,93		+ 9,26	15,39			1,08	45,22	21 . 9 . 1,56	☽ 1 L.
21 . 22 . 11,21			11,52	57,71	46,19			21 . 22 . 57,70	β Aquarii.
21 . 30 . 15,72			16,12					21 . 31 . 2,31	γ Capricorni.
21 . 37 . 14,93			15,33					21 . 38 . 1,52	δ Capricorni.
21 . 56 . 37,62			37,87	24,08	46,21			21 . 57 . 24,07	α Aquarii.
22 . 11 . 47,49			47,84					22 . 12 . 34,06	Uranus.
10 . 47 . 1,50			1,66			1,10	46,35	10 . 47 . 48,50	Venus 2 L.
13 . 0 . 33,11	43,48		57,56	42,61	45,05			1 . 1 . 44,51	Polaris SP.
13 . 35 . 3,79 13 . 37 . 15,09			9,77					13 . 36 . 56,74	☉'s center.
14 . 7 . 24,27			24,29	11,46	47,17			14 . 8 . 11,29	Arcturus.
19 . 42 . 1,17			1,33	48,56	47,23			19 . 42 . 48,58	α Aquilæ.
19 . 46 . 29,76			29,93					19 . 47 . 17,19	β Aquilæ.
20 . 8 . 11,57			11,92	59,00	47,17			20 . 8 . 59,19	α^2 Capricorni.
21 . 22 . 10,12			10,43	57,69	47,26			21 . 22 . 57,76	β Aquarii.
21 . 30 . 14,69			15,09					21 . 31 . 2,43	γ Capricorni.
21 . 37 . 13,84			14,24					21 . 38 . 1,58	δ Capricorni.
23 . 59 . 10,95			10,88	58,37	47,49			23 . 59 . 58,33	α Andromedæ.
1 . 1 . 19,23	8,60		55,46	42,53	47,07		47,45	1 . 1 . 42,96	Polaris.
8 . 33 . 18,72			18,74			1,07	47,44	8 . 34 . 6,56	Mars 2 L.
9 . 9 . 58,07 9 . 10 . 0,63			59,41					9 . 10 . 47,26	Jupiter's center.
9 . 18 . 44,67			44,99	32,92	47,93			9 . 19 . 32,85	α Hydræ.
9 . 58 . 51,00			51,12	39,17	48,05			9 . 59 . 39,00	Regulus.
10 . 51 . 8,95			9,11					10 . 51 . 57,03	Venus 2 L.
11 . 39 . 54,26			54,35	42,26	47,91			11 . 40 . 42,31	β Leonis.
13 . 0 . 28,91	39,28		53,36	42,43	49,07			1 . 1 . 41,38	Polaris SP.
13 . 38 . 48,92 13 . 41 . 0,32			54,96					13 . 40 . 43,01	☉'s center.
14 . 7 . 23,41			23,45	11,47	48,02			14 . 8 . 11,52	Arcturus.
17 . 26 . 32,01			32,14	20,36	48,22			17 . 27 . 20,36	α Ophiuchi.
19 . 42 . 0,15			0,32	48,54	48,22			19 . 42 . 48,64	α Aquilæ.
19 . 46 . 28,57			28,75					19 . 47 . 17,07	β Aquilæ.
20 . 8 . 10,38			10,73	59,07	48,34			20 . 8 . 59,07	α^2 Capricorni.
21 . 22 . 9,03			9,35	57,68	48,33			21 . 22 . 57,74	β Aquarii.
22 . 59 . 42,27			42,63					23 . 0 . 31,10	☽ 1 L.
23 . 59 . 9,96			9,90	58,37	48,47			23 . 59 . 58,41	α Andromedæ.
8 . 35 . 23,41		+ 11,16	23,52			1,08	48,51	8 . 36 . 12,42	Mars 2 L.

Error of Collimation = − 1″,8.

Level Error = − 3″,25. From Oct. 20. = − 2″,98, by the levelling on Oct. 26.

Meridian Error from Oct. 18, by Polaris SP., Polaris, and Polaris SP., Oct. 18 and 19.

.... from Mars, Oct. 20, by Polaris, Polaris SP., and Polaris, Oct. 21 and 22.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Oct. 21	⊙ 1 L.} .... (clouds)	... ...	... ...	... ..	35,0	48,8	2,3	13 . 43 . 15,9	−20,65	C.
	⊙ 2 L.}	5,0	18,6	32,4	46,1	0,1	... ...	13 . 45	+13,74	C.
	⁎ N.P.D. 60° . 26′. ...	7,4	23,0	38,6	53,9	9,8	24,8	21 . 1 . 40,0		C.
	ζ Cygni	23,5	39,0	54,5	9,9	25,6	40,7	21 . 5 . 55,8		C.
	β Aquarii............	27,0	40,8	54,3	7,7	21,5	34,8	21 . 22 . 48,3		C.
	ε Pegasi	39,4	53,1	6,8	20,5	34,4	47,7	21 . 36 . 1,5		C.
	α Aquarii	53,6	7,2	20,7	34,3	47,9	1,0	21 . 57 . 14,3		C.
	(*a*) Uranus...............	... ...	... ...	... ...	32,6	46,3	0,0	22 . 12 . 13,8	−20,68	C.
	ψ^3 Aquarii	57,4	11,0	24,8	38,7	52,2	5,8	23 . 10 . 19,6		C.
	(*b*) *n* Piscium...........	3,1	16,8	29,9	43,8	57,7	10,6	23 . 39 . 24,2		C.
	☽ 1 L.	53,8	7,6	21,5	35,3	49,6	3,0	23 . 51 . 16,8		C.
	α Andromedæ.........	22,7	38,0	53,4	8,6	24,2	39,2	23 . 59 . 54,7		C.
	t Piscium	32,4	46,0	59,5	12,8	26,7	40,0	0 . 16 . 53,3		C.
	Polaris	36.27,2	44.46,5	53. 4,8	1.17,7	9.41,5	17.44,2	1 . 26 . 0,3		C.
	α Arietis	26,3	40,9	55,6	10,0	25,0	39,5	1 . 57 . 53,9		C.
	Polaris SP... (very cloudy)	35.42,8	43.58,2	52. 0,6	0.26,2	... ...	... ...	13	+12 . 23,88	B.
Oct. 22	⊙ 1 L.} .... (cloudy)	39,5	53,2	7,3	20,9	35,0	48,4	13 . 47 . 2,2		B.
	⊙ 2 L.}	51,3	5,2	19,0	32,9	47,0	0,1	13 . 49 . 13,9		B.
	n Piscium............	2,0	15,7	29,0	42,6	56,1	9,6	23 . 39 . 23,0		B.
	α Andromedæ	21,7	37,2	52,3	7,7	23,2	38,1	23 . 59 . 53,4		B.
	t Piscium	31,3	45,0	58,5	11,9	25,7	38,8	0 . 16 . 52,1		B.
	☽ 1 L................	3,7	17,1	30,7	44,7	58,8	12,2	0 . 40 . 26,0		B.
	e Piscium...........	27,0	40,7	53,9	7,6	21,3	34,5	0 . 59 . 47,9		B.
	Polaris .... (blazing)	36.29,4	44.47,8	53. 6,4	... ...	9.42,6	17.47,8	1 . 26 . 4,2	+ 0,03	B.
	α Arietis	25,1	39,9	54,6	9,1	23,7	38,2	1 . 57 . 52,7		B.
	α Ceti	14,3	27,8	41,1	54,8	8,5	21,7	2 . 53 . 35,3		B.
Oct. 23	*e* Piscium...........	25,6	39,1	53,0	6,5	20,1	33,4	0 . 59 . 46,9		B.
	☽ 1 L................	38,2	51,9	6,1	19,8	33,9	47,4	1 . 29 . 1,5		B.
Oct. 25	α Aquarii........ (cloudy)	48,5	1,9	15,8	29,3	43,1	56,1	21 . 57 . 9,5		B.
	α Andromedæ.. (very cloudy)	... ...	... ...	48,6	4,3	19,4	34,2	23 . 59 . 49,7	−15,29	B.
	(*c*) Polaris	36.24,2	44.40,6	52.59,4	1.15,2	9.35,8	17.42,8	1 . 25 . 57,4		B.
	α Arietis .... (cloudy)	21,3	36,0	50,6	5,3	20,2	34,2	1 . 57 . 48,8		B.
Oct. 26	Polaris SP. (cloudy, unsteady)	... ...	... ...	51.57,4	0.19,2	8.33,8	16.52,2	13 . 25 . 10,6	−8 . 15,09	B.
Oct. 27	α Herculis............	32,4	46,3	0,4	14,3	28,4	41,9	17 . 6 . 55,8		B.
	α Ophiuchi	41,7	55,6	9,7	23,4	37,4	50,8	17 . 27 . 4,7		B.
	δ Ursæ Minoris.......	... ...	16.30,5	20.18,8	24. 4,4	27.54,7	31.36,0	18 . 35 . 23,6	−1 . 53,53	C.
	α Aquilæ	10,4	24,1	37,5	51,2	5,3	18,5	19 . 42 . 32,1		B.
	β Aquilæ............	39,1	52,6	6,3	19,8	33,6	46,9	19 . 47 . 0,4		B.
	α^2 Capricorni	20,1	33,9	47,9	1,7	15,7	29,1	20 . 8 . 42,9		B.
	β Aquarii............	19,5	33,2	46,9	0,3	14,1	27,2	21 . 22 . 40,8		B.
	ε Pegasi	32,0	45,4	58,9	13,0	26,9	40,1	21 . 35 . 53,7		B.
	Uranus	25,5	39,3	53,1	6,9	20,7	34,1	22 . 11 . 48,0		B.
	α Pegasi	59,4	13,7	27,2	41,2	55,3	9,0	22 . 56 . 22,9		B.
	(*d*) Ceres	55,4	9,9	24,1	37,8	52,5	7,3	23 . 1 . 21,8		B.
	α Andromedæ.........	15,1	31,1	46,1	1,3	17,1	31,6	23 . 59 . 47,0		B.
	Polaris.......... (blazing)	36.21,4	44.36,6	52.56,8	1.11,6	9.37,2	17.43,6	1 . 25 . 57,8		B.
	Aldebaran....... (cloudy)	54,4	8,7	23,0	36,6	50,9	4,8	4 . 26 . 18,7		C.
	τ Tauri..... (very cloudy)	... ...	1,5	16,0	30,4	45,3	59,8	4 . 31	− 0,03	C.
	Polaris SP.. (very cloudy and unsteady)	35.34,2	43.49,6	51.56,4	... ...	... ...	... ...	13	+16 . 32,18	B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, Oct. 26. 1^{h}, and Nov. 1. 1^{h}.

(*a*) Hurried: last wire put down 3,8.
(*b*) Not good.
(*c*) Sometimes clouded, sometimes blazing.
(*d*) Very faint and doubtful.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
13 . 42 . 34,85		+ 11,16	40,98			1,08	48,51	13 . 44 . 30,11	⊙'s center.
13 . 44 . 46,18									
21 . 0 . 53,93			53,90					21 . 1 . 43,36	✱ N.P.D. 60°. 26′.
21 . 5 . 9,86			9,83					21 . 5 . 59,29	ζ Cygni.
21 . 22 . 7,77			8,20	57,67	49,47			21 . 22 . 57,67	β Aquarii.
21 . 35 . 20,48			20,73					21 . 36 . 10,21	ϵ Pegasi.
21 . 56 . 34,14			34,50	24,04	49,54			21 . 57 . 24,00	α Aquarii.
22 . 11 . 32,50			32,98					22 . 12 . 22,49	Uranus.
23 . 9 . 38,50			38,97					23 . 10 . 28,52	ψ^3 Aquarii.
23 . 38 . 43,73			44,12					23 . 39 . 33,70	*n* Piscium.
23 . 50 . 35,37			35,80					23 . 51 . 25,38	☽ 1 L.
23 . 59 . 8,69			8,69	58,37	49,68			23 . 59 . 58,28	α Andromedæ.
0 . 16 . 12,96			13,30				49,59	0 . 17 . 2,90	*t* Piscium.
1 . 1 . 17,46			51,51	42,18	50,67			1 . 1 . 41,15	Polaris.
1 . 57 . 10,17			10,25	59,78	49,53			1 . 57 . 59,93	α Arietis.
13 . 0 . 25,83	35,69		52,65	42,11	49,46	1,12	49,55	1 . 1 . 42,80	Polaris SP.
13 . 46 . 20,92			27,31					13 . 48 . 17,50	⊙'s center.
13 . 48 . 32,77									
23 . 38 . 42,57			42,96					23 . 39 . 33,61	*n* Piscium.
23 . 59 . 7,66			7,66	58,36	50,70			23 . 59 . 58,33	α Andromedæ.
0 . 16 . 11,90			12,24				50,67	0 . 17 . 2,92	*t* Piscium.
0 . 39 . 44,74			45,08					0 . 40 . 35,78	☽ 1 L.
0 . 59 . 7,56			7,85					0 . 59 . 58,57	*e* Piscium.
1 . 1 . 19,73	9,63		53,78	42,06	48,28			1 . 1 . 44,50	Polaris.
1 . 57 . 9,05			9,13	59,79	50,66			1 . 57 . 59,89	α Arietis.
2 . 52 . 54,79			55,10	45,97	50,87			2 . 53 . 45,91	α Ceti.
0 . 59 . 6,37			6,66			1,18	51,85	0 . 59 . 58,56	*e* Piscium.
1 . 28 . 19,83			20,11					1 . 29 . 12,03	☽ 1 L.
21 . 56 . 29,17		+ 10,87	29,52	23,99	54,47	1,30	53,18	21 . 57 . 23,89	α Aquarii.
23 . 59 . 3,95			3,94	58,36	54,42			23 . 59 . 58,42	α Andromedæ.
1 . 1 . 13,63	3,53		48,09	41,86	53,77		54,48	1 . 1 . 42,62	Polaris.
1 . 57 . 5,20			5,27	59,81	54,54			1 . 57 . 59,86	α Arietis.
13 . 0 . 19,55	29,41	+ 10,55	45,45	41,73	56,28	1,03	56,06	1 . 1 . 42,07	Polaris SP.
17 . 6 . 14,21			14,32	11,07	56,75			17 . 7 . 11,11	α Herculis.
17 . 26 . 23,33			23,47	20,27	56,80			17 . 27 . 20,28	α Ophiuchi.
18 . 24 . 4,47			52,32	48,87	56,55			18 . 24 . 49,17	δ Ursæ Minoris.
19 . 41 . 51,30			51,50	48,43	56,93			19 . 42 . 48,40	α Aquilæ.
19 . 46 . 19,82			20,03					19 . 47 . 16,94	β Aquilæ.
20 . 8 . 1,61			2,02	58,96	56,94			20 . 8 . 58,95	α^2 Capricorni.
21 . 22 . 0,28			0,64	57,59	56,95			21 . 22 . 57,62	β Aquarii.
21 . 35 . 12,86			13,06					21 . 36 . 10,05	ϵ Pegasi.
22 . 11 .. 6,80			7,22					22 . 12 . 4,23	Uranus.
22 . 55 . 41,24			41,37	38,28	56,91			22 . 56 . 38,41	α Pegasi.
23 . 0 . 38,40			38,92					23 . 1 . 35,97	Ceres.
23 . 59 . 1,33			1,26	58,35	57,09			23 . 59 . 58,35	α Andromedæ.
1 . 1 . 12,14	0,53		45,55	41,68	56,13		57,09	1 . 1 . 42,68	Polaris.
4 . 25 . 36,73			36,83	34,27	57,44			4 . 26 . 34,11	Aldebaran.
4 . 31 . 30,57			30,58					4 . 32 . 27,86	τ Tauri.
13 . 0 . 18,91	30,22		46,26	41,63	55,37	0,66	57,26	1 . 1 . 43,88	Polaris SP.

Error of Collimation = − 1″,8.

Level Error = − 2″,98. From Oct. 27. = − 3″,76, by the levelling on Nov. 1.

Meridian Error from Oct. 25, by Polaris, Oct. 25, and Polaris SP., Oct. 26, allowing $2^s,16$ for loss of clock and change of Æ.

Meridian Error from Oct. 26, by two sets of three consecutive transits of Polaris, Oct. 26, 27, and 28, the first giving 10″,45, the other 10″,64. The mean of these is used.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Oct. 28	⊙ 1 L.	31,8	45,9	59,4	13,3	27,2	41,0	14 . 9 . 54,7		B.
	⊙ 2 L.	43,8	58,6	12,2	26,2	40,3	54,0	14 . 12 . 8,0		B.
	α Ophiuchi	40,8	54,7	8,6	22,3	36,4	50,0	17 . 27 . 3,7		B.
	α Aquilæ	9,6	23,1	37,1	50,5	4,3	17,7	19 . 42 . 31,1		B.
	β Aquilæ } (blur)	38,1	51,8	5,2	19,1	32,6	46,1	19 . 46 . 59,4		B.
	α^2 Capricorni } (blur)	19,2	33,1	46,9	0,9	15,0	28,2	20 . 8 . 41,9		B.
	β Aquarii	18,4	31,9	46,0	59,3	13,1	26,4	21 . 22 . 40,1		B.
	ε Pegasi (blur)	30,4	44,5	58,2	12,0	25,7	39,1	21 . 35 . 52,7		B.
	Uranus	21,9	35,9	49,8	3,6	17,7	50,9	22 . 11 . 44,8		B.
	α Pegasi	58,4	12,9	26,3	40,2	54,1	7,9	22 . 56 . 22,1		B.
	ψ^3 Aquarii	48,7	2,9	16,5	30,1	44,0	57,3	23 . 10 . 11,1		B.
	α Andromedæ	14,4	29,9	45,1	0,5	16,1	30,8	23 . 59 . 46,3		B.
	Polaris (blazing)	36.23,6	44.41,2	52.57,8	1.14,2	9.37,2	17.42,4	1 . 26 . 2,2		B.
Oct. 29	(*a*) α Aquarii	44,8	58,2	12,3	25,2	39,1	52,1	21 . 57 . 5,7		B.
	Uranus	19,2	32,9	47,1	0,7	14,7	28,2	22 . 11 . 41,8		B.
	α Pegasi	58,0	12,1	25,9	39,8	54,1	7,5	22 . 56 . 21,3		B.
Oct. 30	(*b*) Jupiter 1 L.	10,1	......	38,4	......	6,9	......	9 . 15 . 34,7		B.
	Jupiter 2 L.	......	27,1	......	55,2	......	23,3	9 . 15		B.
	α Hydræ	53,3	7,1	20,5	34,1	48,0	1,5	9 . 19 . 14,9		B.
	Regulus	59,3	13,2	27,1	40.7	54,6	8,3	9 . 59 . 22,1		B.
	Venus 2 L.	23,8	38,2	51,3	4,8	18,8	31,6	11 . 37 . 45,5		B.
	β Leonis	2,1	15,8	29,9	43,9	58,0	11,6	11 . 40 . 55,6		B.
	Polaris SP.	35.29,6	43.48,6	51.50,2	0.14,4	8.28,8	16.46,8	13 . 25 . 5,2		B.
	Arcturus	29,7	44,1	58,4	12,7	27,3	41,3	14 . 7 . 55,5		B.
Oct. 31	(*b*) ⊙ 1 L. } (much waving)	10,4	24,2	38,2	52,5	6,7	20,1	14 . 21 . 34,0		B.
	⊙ 2 L. } (much waving)	24,2	38,5	52,2	6,1	20,4	33,9	14 . 23 . 47,9		B.
	α Ophiuchi	39,8	53,6	7,7	21,4	35,4	48,8	17 . 27 . 2,6		B.
	α Aquilæ	8,5	22,1	36,1	49,4	3,2	16,8	19 . 42 . 30,3		B.
	β Aquilæ	37,4	51,0	4,6	17,9	32,1	45,2	19 . 46 . 58,8		B.
	α^2 Capricorni	18,3	31,9	46,1	59,8	14,1	27,3	20 . 8 . 41,1		B.
	ζ Cygni	14,2	29,6	45,1	0,8	16,3	31,4	21 . 5 . 47,1		B.
	β Aquarii	17,7	31,6	45,2	58,9	12,7	25,9	21 . 22 . 39,2		B.
	ε Pegasi	30,1	44,1	57,2	11,2	25,0	38,2	21 . 35 . 52,0		B.
	Uranus	15,1	28,9	42,7	56,4	10,5	24,0	22 . 11 . 38,1		B.
	α Pegasi	57,8	12,1	26,0	39,5	53,4	7,1	22 . 56 . 21,2		B.
	ψ^3 Aquarii	48,0	2,0	15,6	29,4	42,9	57,0	23 . 10 . 10,6		B.
	α Andromedæ	14,0	29,2	44,4	59,7	15,2	30,1	23 . 59 . 45,4		B.
	Polaris (very cloudy)	36.20,2	44.39,6	52.59,8	1.14,4	9.34,8	17.41,6	1 . 25 . 56,2		B.
Nov. 2	β Aquarii	17,8	31,6	45,1	58,6	12,2	25,8	21 . 22 . 39,1		B.
	α Aquarii (cloudy)	44,3	57,7	11,3	24,6	38,2	52,0	21 . 57 . 5,3		B.
	α Pegasi	57,7	11,7	25,5	39,5	53,6	7,1	22 . 56 . 21,1		B.
	α Andromedæ	13,6	28,8	44,2	59,4	15,1	30,1	23 . 59 . 45,3		B.
	Polaris (cloudy)	36.22,2	44.41,4	52.56,8	1.13,2	9.38,4	17.43,8	1 . 25 . 59,6		B.
	α Arietis	17,3	32,1	46,8	1,3	16,1	30,4	1 . 57 . 45.2		B.
	Mars 2 L.	10,1	24,3	38,3	52,7	8,0	21,4	9 . 1 . 35,3		B.
	Jupiter 1 L.	20,9	......	49,0	......	17,1	......	9 . 16 . 45,1		B.
	Jupiter 2 L.	......	37,6	......	5,7	......	33,9	9 . 16		B.
	α Hydræ	53,3	7,1	20,6	34,2	48,2	1,3	9 . 19 . 15,1		B.
	Polaris SP. (very cloudy)	35.26,4	43.47,2	51.51,6	0.14,2	......	......	13	+ 12 . 24,47	B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.

(*a*) The temperature on the evening of this day was at 29°,3. The clock rate appears to be affected by the rapid variation of temperature.

(*b*) The temperature still very low.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
14. 9.13,33		+10,55	20,16			0,66	57,26	14.11.17,81	☉'s center.
14.11.26,16									
17.26.22,36			22,50	20,26	57,76			17.27.20,24	α Ophiuchi.
19.41.50,48			50,68	48,41	57,73			19.42.48,48	α Aquilæ.
19.46.18,90			19,11					19.47.16,91	β Aquilæ.
20. 8. 0,74			1,15	58,95	57,80			20. 8.58,96	α^2 Capricorni.
21.21.59,32			59,68	57,58	57,90			21.22.57,53	β Aquarii.
21.35.11,80			12,00					21.36. 9,85	ε Pegasi.
22.11. 3,51			3,93					22.12. 1,80	Uranus.
22.55.40,27			40,40	38,27	57,87			22.56.38,29	α Pegasi.
23. 9.30,08			30,48					23.10.28,38	ψ^3 Aquarii.
23.59. 0,44			0,37	58,34	57,97			23.59.58,29	α Andromedæ.
1. 1.14,09	2,48		47,50	41,57	54,07		57,92	1. 1.45,45	Polaris.
21.56.25,34			25,64	23,94	58,30	0,34	57,99	21.57.23,94	α Aquarii.
22.11. 0,65			1,07					22.11.59,37	Uranus.
22.55.39,82			39,95	38,26	58,31			22.56.38,27	α Pegasi.
9.14.52,52		+11,84	54,01			0,19	58,51	9.15.52,59	Jupiter's center.
9.14.55,20									
9.18.34,20			34,65	33,24	58,59			9.19.33,23	α Hydræ.
9.58.40,75			40,95	39,48	58,53			9.59.39,54	Regulus.
11.37. 4,86			5,16					11.38. 3,76	Venus 2 L.
11.39.43,84			44,01	42,50	58,49			11.40.42,61	β Leonis.
13. 0.14,80	26,11		44,11	41,07	56,96			1. 1.42,72	Polaris SP.
14. 7.12,71			12,80	11,54	58,74			14. 8.11,42	Arcturus.
14.20.52,30			59,75					14.22.58,37	☉'s center.
14.23. 6,17									
17.26.21,32			21,52	20,23	58,71			17.27.20,17	α Ophiuchi.
19.41.49,49			49,75	48,37	58,62	0,21	58,72	19.42.48,30	α Aquilæ.
19.46.18,15			18,42					19.47.16,97	β Aquilæ.
20. 7.59,80			0,29	58,90	58,61			20. 8.58,83	α^2 Capricorni.
21. 5. 0,64			0,57					21. 5.59,11	ζ Cygni.
21.21.58,75			59,19	57,53	58,34			21.22.57,72	β Aquarii.
21.35.11,11			11,37					21.36. 9,90	ε Pegasi.
22.10.56,53			57,04					22.11.55,57	Uranus.
22.55.39,59			39,78	38,24	58,46			22.56.38,30	α Pegasi.
23. 9.29,36			29,84					23.10.28,36	ψ^3 Aquarii.
23.58.59,72			59,69	58,32	58,63			23.59.58,20	α Andromedæ.
1. 1.12,37	0,76		43,95	40,93	56,98		58,51	1. 1.42,37	Polaris.
21.21.58,60			59,04	57,51	58,47	0,22	58,42	21.22.57,66	β Aquarii.
21.56.24,77			25,14	23,89	58,75			21.57.23,76	α Aquarii.
22.55.39,46			39,65	38,22	58,57			22.56.38,28	α Pegasi.
23.58.59,50			59,47	58,31	58,84			23.59.58,11	α Andromedæ.
1. 1.13,63	2,02		45,21	40,30	55,09		58,64	1. 1.43,86	Polaris.
1.57. 1,31			1,37	59,87	58,50			1.58. 0,03	α Arietis.
9. 0.52,87			52,98			0,38	58,55	9. 1.51,67	Mars 2 L.
9.16. 3,02			4,53					9.17. 3,23	Jupiter's center.
9.16. 5,73									
9.18.34,26			34,71	33,34	58,63			9.19.33,41	α Hydræ.
13. 0.14,32	25,63		43,63	40,12	56,49			1. 1.42,39	Polaris SP.

Error of Collimation =− 1″,8.

Level Error =− 3″,76.

Meridian Error from Oct. 30, by Polaris SP., Oct. 30, and Polaris, Oct. 31, allowing $0^s,20$ for loss of clock and change of Æ. The three consecutive transits, Nov. 2 and 3, give the same result.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Nov. 3	β Aquarii	17,4	30,9	44,8	58,1	12,0	25,1	21 . 22 . 38,9		B.
	α Aquarii............	44,1	57,6	11,5	24,8	38,1	51,5	21 . 57 . 5,2		B.
	Uranus	10,8	24,4	38,1	51,6	6,0	19,2	22 . 11 . 33,0		B.
	α Pegasi	57,2	11,1	24,9	39,0	53,2	6,9	22 . 56 . 20,9		B.
	α Andromedæ.........	13,2	28,7	43,9	59,1	14,7	29,6	23 . 59 . 44,9		B.
	Polaris................	36.19,2	44.36,8	52.53,4	1. 8,2	9.32,6	17.38,2	1 . 25 . 51,8		B.
	Mars 2 L...............	59,5	14,3	28,5	42,4	57,3	11,2	9 . 3 . 25,3		B.
	Jupiter 1 L.	42,8	......	10,9	......	39,0	......	9 . 17 . 7,2		B.
	Jupiter 2 L.	......	59,7	......	27,9	......	55,6	9 . 17		B.
	(a) α Hydræ............	......	......	19,9	34,0	47,9	1,2	9 . 19 . 14,6	– 13,61	B.
	Regulus	58,6	12,5	26,2	40,0	54,0	7,7	9 . 59 . 21,4		B.
Nov. 5	⊙ 1 L.................	51,8	5,9	19,8	33,7	48,1	1,9	14 . 41 . 15,8		B.
	⊙ 2 L.................	6,9	20,9	35,1	48,9	3,4	17,1	14 . 43 . 30,9		B.
	(b) α Aquilæ....... (blazing)	6,9	20,3	34,3	48,9	2,1	15,2	19 . 42 . 28,6		B.
	β Aquilæ	35,6	48,9	3,1	16,3	30,2	43,4	19 . 46 . 56,9		B.
	α² Capricorni.........	16,6	30,4	44,3	58,2	12,3	26,0	20 . 8 . 39,9		B.
	β Aquarii............	16,1	30,0	43,4	56,9	10,6	23,9	21 . 22 . 37,4		B.
	α Aquarii	43,1	56,3	9,9	23,2	37,0	50,1	21 . 57 . 3,8		B.
	Uranus	7,1	20,9	34,5	48,2	2,3	16,0	22 . 11 . 29,8		B.
	α Pegasi	56,0	10,1	24,0	37,7	52,0	5,7	22 . 56 . 19,4		B.
	α Andromedæ.........	12,1	27,3	43,1	58,1	13,5	28,4	23 . 59 . 43,9		B.
	Polaris................	36.16,8	44.36,2	52.57,4	1. 7,8	9.27,6	17.36,2	1 . 25 . 53,6		B.
	Polaris SP............	......	......	51.50,4	0.10,8	8.23,4	16.43,6	13 . 25 . 1,8	– 8 . 15,41	B.
Nov. 6	Mars 2 L..............	......	36,2	50,4	4,7	19,3	33,4	9 . 8 . 47,3	– 7,11	B.
	Jupiter 1 L.	44,0	......	12,1	......	40,4	......	9 . 18 . 8,2		B.
	Jupiter 2 L.	......	0,9	......	28,8	......	57,0	9 . 17		B.
	Regulus	57,1	11,0	24,3	38,2	52,2	6,3	9 . 59 . 20,0		B.
	Venus 2 L.............	11,6	25,3	38,7	52,4	6,1	19,4	12 . 7 . 32,6		B.
	Polaris SP.	35.25,4	43.41,2	51.48,6	0. 8,6	8.21,2	16.42,4	13 . 25 . 0,6		B.
	Mercury 2 L....... .	......	......	17,8	31,1	44,8	58,3	13 . 40 . 12,1	– 13,66	B.
	Arcturus	27,1	41,3	55,9	10,2	24,6	38,9	14 . 7 . 53,0		B.
Nov. 7	⊙ 1 L.	49,8	3,7	17,8	32,1	46,2	0,1	14 . 49 . 14,1		B.
	⊙ 2 L.	5,1	19,3	33,2	47,7	1,9	15,3	14 . 51 . 29,5		B.
	α Ophiuchi	37,1	51,0	4,9	18,7	32,7	46,1	17 . 26 . 59,8		B.
	α Aquilæ	5,7	19,3	33,2	46,9	0,5	14,1	19 . 42 . 27,9		B.
	β Aquilæ............	34,7	48,1	2,0	15,3	29,1	43,1	19 . 46 . 55,7		B.
	α² Capricorni..........	15,6	29,2	43,1	57,0	11,1	24,9	20 . 8 . 38,4		B.
	β Aquarii	15,1	29,0	42,2	56,0	9,8	23,0	21 . 22 . 36,2		B.
	α Aquarii.............	42,0	54,9	9,2	22,1	35,6	49,1	21 . 57 . 2,7		B.
	Uranus	4,8	18,5	32,2	46,1	0,1	13,9	22 . 11 . 27,2		B.
	α Pegasi	55,0	9,1	23,1	36,6	50,4	4,5	22 . 56 . 18,3		B.
	(c) Ceres	36,1	50,3	4,8	19,2	33,4	48,0	23 . 0 . 2,5		B.
	α Andromedæ.........	10,8	26,1	41,4	56,8	12,5	27,3	23 . 59 . 43,1		B.
	Polaris	36. 9,8	44.33,4	52.51,6	1. 6,6	9.29,4	17.32,6	1 . 25 . 49,2		B.
	Mars 2 L..............	......	......	35,4	49,4	4,3	18,5	9 . 10 . 32,3	– 14,21	B.
	Jupiter 1 L.	3,6	......	31,2	......	59,8	......	9 . 18 . 27,1		B.
	Jupiter 2 L.	......	20,3	......	48,1	......	16,1	9 . 18		B.
	Regulus	56,4	10,5	24,3	38,2	52,1	5,9	9 . 59 . 19,3		B.
	Venus 2 L....... (cloudy)	28,9	42,4	56,0	......	23,2	36,5	12 . 11 . 50,1		B.
	Polaris SP...... (dancing)	35.26,2	43.39,6	51.50,4	0. 8,2	8.26,8	16.42,4	13 . 25 . 1,8		B.
	Mercury 2 L...(faint and unsteady)	58,9	12,5	26,7	40,1	53,6	7,2	13 . 44 . 20,9		B.
	Arcturus	26,9	41,1	55,6	9,9	24,3	38,6	14 . 7 . 53,1		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, Nov. 7. 1^h.

(a) Much hurried.

(b) Intervals not good: the middle wire apparently should be 47,9.

(c) If this be Ceres, the observed time is too small by 1^m. The right ascension by Nautical Almanack is $23^h. 1^m,4$.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
21 . 21 . 58,17		+ 11,84	58,64	57,49	58,85	0,38	58,55	21 . 22 . 57,53	β Aquarii.
21 . 56 . 24,69			25,10	23,88	58,78			21 . 57 . 24,00	α Aquarii.
22 . 10 . 51,87			52,41					22 . 11 . 51,31	Uranus.
22 . 55 . 39,03			39,27	38,21	58,94			22 . 56 . 38,18	α Pegasi.
23 . 58 . 59,16			59,20	58,30	59,10			23 . 59 . 58,13	α Andromedæ.
1 . 1 . 8,60	58,85		42,04	39,95	57,91		58,93	1 . 1 . 40,99	Polaris.
9 . 2 . 42,64			42,80			0,51	58,94	9 . 3 . 41,93	Mars 2 L.
9 . 16 . 24,97			26,56					9 . 17 . 25,69	Jupiter's center.
9 . 16 . 27,73									
9 . 18 . 33,91			34,39	33,37	58,98			9 . 19 . 33,53	α Hydræ.
9 . 58 . 40,05			40,30	39,61	59,31			9 . 59 . 39,45	Regulus.
14 . 40 . 33,86		+ 12,81	42,08			0,65	59,44	14 . 42 . 41,92	⊙'s center.
14 . 42 . 49,03									
19 . 41 . 48,05			48,39	48,29	59,90			19 . 42 . 48,36	α Aquilæ.
19 . 46 . 16,34			16,71					19 . 47 . 16,69	β Aquarii.
20 . 7 . 58,25			58,83	58,83	60,00			20 . 8 . 58,81	α^2 Capricorni.
21 . 21 . 56,90			57,42	57,46	60,04			21 . 22 . 57,44	β Aquarii.
21 . 56 . 23,34			23,80	23,85	60,05			21 . 57 . 23,83	α Aquarii.
22 . 10 . 48,40			49,00					22 . 11 . 49,04	Uranus.
22 . 55 . 37,85			38,13	38,19	60,06			22 . 56 . 38,19	α Pegasi.
23 . 58 . 58,06			58,13	58,29	60,16			23 . 59 . 58,22	α Andromedæ.
1 . 1 . 7,94	58,19		40,00	39,31	59,31		60,09	1 . 1 . 40,12	Polaris.
13 . 0 . 10,59	20,12		39,59	39,16	59,57			1 . 1 . 40,03	Polaris SP.
9 . 8 . 4,77		+ 11,92	4,96			0,60	60,85	9 . 9 . 6,03	Mars 2 L.
9 . 17 . 26,17			27,75					9 . 18 . 28,82	Jupiter's center.
9 . 17 . 28,90									
9 . 58 . 38,45			38,70	39,70	61,00			9 . 59 . 39,79	Regulus.
12 . 6 . 52,30			52,68					12 . 7 . 53,83	Venus 2 L.
13 . 0 . 9,71	19,24		37,36	38,89	61,53			1 . 1 . 38,54	Polaris SP.
13 . 39 . 31,16			31,64					13 . 40 . 32,84	Mercury 2 L.
14 . 7 . 10,14			10,29	11,60	61,31			14 . 8 . 11,51	Arcturus.
14 . 48 . 31,97			40,29					14 . 50 . 41,52	⊙'s center.
14 . 50 . 47,43									
17 . 26 . 18,62			18,87	20,17	61,30			17 . 27 . 20,16	α Ophiuchi.
19 . 41 . 46,80			47,10	48,27	61,17	0,29	60,96	19 . 42 . 48,31	α Aquilæ.
19 . 46 . 15,43			15,75					19 . 47 . 16,96	β Aquilæ.
20 . 7 . 57,04			57,57	58,81	61,24			20 . 8 . 58,78	α^2 Capricorni.
21 . 21 . 55,90			56,37	57,44	61,07			21 . 22 . 57,59	β Aquarii.
21 . 56 . 22,23			22,64	23,83	61,19			21 . 57 . 23,86	α Aquarii.
22 . 10 . 46,12			46,66					22 . 11 . 47,89	Uranus.
22 . 55 . 36,72			36,96	38,17	61,21			22 . 56 . 38,19	α Pegasi.
22 . 59 . 19,19			19,81					23 . 0 . 21,04	Ceres.
23 . 58 . 56,86			56,90	58,27	61,37			23 . 59 . 58,15	α Andromedæ.
1 . 1 . 4,66	54,91		37,98	38,77	60,79		61,25	1 . 1 . 39,24	Polaris.
9 . 9 . 49,77			49,96			0,38	61,27	9 . 10 . 51,37	Mars 2 L.
9 . 17 . 45,42			47,00					9 . 18 . 48,42	Jupiter's center.
9 . 17 . 48,17									
9 . 58 . 38,10			38,35	39,73	61,38			9 . 59 . 39,78	Regulus.
12 . 11 . 9,52			9,92					12 . 12 . 11,38	Venus 2 L.
13 . 0 . 10,77	20,30		38,42	38,65	60,23			1 . 1 . 39,90	Polaris SP.
13 . 43 . 39,98			40,46					13 . 44 . 41,95	Mercury 2 L.
14 . 7 . 9,93			10,08	11,62	61,54			14 . 8 . 11,57	Arcturus.

Error of Collimation =– 1″,8.

Level Error =– 3″,76. From Nov. 3. =– 2″,80.

Meridian Error from Nov. 5, by Polaris and Polaris SP. on that day, allowing 0^s,42 for loss of clock and change of Æ.

Meridian Error from Nov. 6, by two sets of three consecutive transits of Polaris, Nov. 6, 7, and 8, the first set giving 11″,95, and the other 11″,89. The mean is used.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Nov. 8	(a) ⊙ 1 L. } …… (very unsteady)	50,1	4,1	18,3	32,3	46,8	0,8	14 . 53 . 14,5		B.
	⊙ 2 L. }	6,0	20,0	34,1	48,2	2,5	16,1	14 . 55 . 29,9		B.
	α Ophiuchi	36,9	50,6	5,3	18,7	32,1	45,9	17 . 27 . 0,1		B.
	α Aquilæ	5,4	19,1	32,7	46,3	0,1	13,4	19 . 42 . 27,1		B.
	β Aquilæ	34,1	48,0	1,5	14,9	28,7	42,1	19 . 46 . 55,5		B.
	α^2 Capricorni. ... (cloudy)	15,2	28,8	43,7	56,8	10,6	24,4	20 . 8 . 38,0		B.
	β Aquarii	14,8	28,4	42,0	55,3	9,2	22,4	21 . 22 . 36,1		B.
	α Aquarii	41,3	55,0	8,7	22,2	35,9	48,9	21 . 57 . 2,4		B.
	Uranus	4,2	17,9	31,6	45,5	59,2	13,1	22 . 11 . 27,0		B.
	α Pegasi	54,8	8,8	22,9	36,5	50,7	4,3	22 . 56 . 18,1		B.
	Ceres .... (very faint)	43,1	56,4	11,7	26,2	40,4	54,9	23 . 1 . 9,2		B.
	α Andromedæ	11,1	26,2	41,3	57,0	12,2	27,2	23 . 59 . 42,7		B.
	Polaris .... (blazing)	36.13,8	44.32,4	52.52,2	1. 6,4	9.27,8	17.30,4	1 . 25 . 54,5		B.
Nov. 9	⊙ 1 L.	51,6	5,9	19,8	34,1	48,2	2,2	14 . 57 . 16,3		B.
	⊙ 2 L.	7,3	21,6	35,8	50,0	4,1	18,1	14 . 59 . 32,2		B.
	Venus 2 L. ...... (cloudy)	4,6	18,4	31,7	45,4	59,1	12,6	12 . 20 . 25,4		B.
	Polaris SP. ...... (cloudy)	......	43.38,8	51.47,4	0. 9,6	8.23,8	16.41,2	13 . 25 . 1,6	– 4 . 7,61	B.
	(b) Mercury 2 L.. (cloudy and faint)	......	18,3	......	45,5	......	......	13 . 53 . 27,3	– 4,53	B.
Nov. 10	⊙ 1 L. } ...... (unsteady)	53,2	7,5	21,5	35,9	50,1	4,1	15 . 1 . 18,1		B.
	⊙ 2 L. }	9,3	23,5	38,0	52,1	6,7	20,1	15 . 3 . 34,0		B.
	(c) Ceres	58,8	14,1	27,6	41,2	55,9	10,6	23 . 1 . 25,3		B.
	α Andromedæ	9,6	24,7	40,1	55,3	10,9	26,2	23 . 59 . 41,2		B.
	Polaris .... (clouds)	36. 9,6	44.27,8	52.44,4	1. 0,2	9.22,6	17.29,4	1 . 25 . 44,8		B.
	α Arietis	13,2	27,7	42,4	57,1	12,0	25,9	1 . 57 . 40,8		B.
	α Ceti	2,4	16,0	29,8	43,0	56,7	10,1	2 . 53 . 23,5		B.
Nov. 11	α Andromedæ	8,6	23,9	39,1	54,3	10,1	24,7	23 . 59 . 40,1		B.
	Polaris ...... (very cloudy)	36. 8,4	......	52.42,8	......	9.24,4	17.27,8	1 . 25 . 49,4	– 3 . 18,52	B.
Nov. 12	α Pegasi	51,5	5,5	19,2	33,1	47,1	1,1	22 . 56 . 14,7		B.
	α Andromedæ	7,6	23,0	38,2	53,3	8,9	23,9	23 . 59 . 39,1		B.
	Polaris ...... (very cloudy)	36. 9,4	44.28,2	52.47,4	......	......	......	1 . 25 . 46,8	+ 6 . 13,45	B.
	α Arietis .... (clouds)	10,9	25,9	40,5	54,9	9,9	24,4	1 . 57 . 38,9		B.
Nov. 13	Venus 2 L.	19,8	33,7	47,2	0,4	14,3	27,6	12 . 37 . 40,9		B.
	Polaris SP.	......	43.34,2	51.44,4	0. 6,8	8.21,6	16.40,2	13 . 24 . 58,6	– 4 . 7,67	B.
	Arcturus	21,8	36,3	50,6	5,1	19,7	33,7	14 . 7 . 48,1		B.
	Mercury 2 L.	34,3	48,2	1,9	15,6	29,5	43,2	14 . 13 . 57,1		B.
Nov. 14	⊙ 1 L. } ..... (very unsteady)	7,7	21,5	36,0	50,3	4,9	19,0	15 . 17 . 33,0		B.
	⊙ 2 L. }	24,7	39,0	53,4	7,8	22,0	36,0	15 . 19 . 50,1		B.
	α Coronæ Borealis	53,5	8,3	23,3	38,6	53,9	9,0	15 . 27 . 24,0		B.
	α Ophiuchi	31,8	45,6	59,9	13,3	27,4	40,9	17 . 26 . 54,7		B.
	α Aquilæ	0,3	14,0	27,3	41,2	55,0	8,7	19 . 42 . 22,1		B.
	β Aquilæ	29,1	42,7	55,9	9,6	23,4	36,9	19 . 46 . 50,3		B.
	α^2 Capricorni	10,1	23,9	37,6	51,5	5,8	19,2	20 . 8 . 33,1		B.
	ψ Capricorni	32,1	47,0	2,2	17,0	32,1	47,1	20 . 36 . 2,2		B.
	☽ 1 L.	45,2	0,3	15,6	30,9	46,1	1,1	20 . 50 . 16,2		B.
	ζ Cygni	5,8	21,1	36,8	52,1	8,1	22,9	21 . 5 . 38,8		B.
	ζ Capricorni	28,8	43,1	57,7	12,5	27,2	42,0	21 . 16 . 56,4		B.
	β Aquarii	9,5	23,1	37,1	50,4	3,9	17,3	21 . 22 . 31,1		B.
	ε Capricorni	5,1	19,6	34,1	48,4	2,9	17,1	21 . 27 . 31,3		B.
	α Aquarii	36,1	49,4	2,9	16,9	30,2	43,9	21 . 56 . 57,8		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, Nov. 14. 1^h.

(*a*) The temperature, which was at 33° on the 8th, increased to 46° on the 9th.

(*b*) Wire V. was written down 45,5, evidently by mistake for wire IV.

(*c*) Extremely doubtful, owing to the faintness of the object and flashing of the transit lamp.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
14 . 52 . 32,41		+ 11,92	40,85			0,38	61,27	14 . 54 . 42,36	⊙'s center.
14 . 54 . 48,12									
17 . 26 . 18,52			18,77	20,17	61,40	– 0,42	61,82	17 . 27 . 20,29	α Ophiuchi.
19 . 41 . 46,30			46,60	48,26	61,66			19 . 42 . 48,08	α Aquilæ.
19 . 46 . 14,97			15,29					19 . 47 . 16,76	β Aquilæ.
20 . 7 . 56,79			57,32	58,80	61,48			20 . 8 . 58,79	α^2 Capricorni.
21 . 21 . 55,46			55,93	57,42	61,49			21 . 22 . 57,38	β Aquarii.
21 . 56 . 22,05			22,46	23,82	61,36			21 . 57 . 23,90	α Aquarii.
22 . 10 . 45,50			46,04					22 . 11 . 47,47	Uranus.
22 . 55 . 36,59			36,83	38,16	61,33			22 . 56 . 38,25	α Pegasi.
23 . 0 . 25,99			26,61					23 . 1 . 28,03	Ceres.
23 . 58 . 56,82			56,86	58,26	61,40			23 . 59 . 58,26	α Andromedæ.
1 . 1 . 5,36	55,61		38,68	38,55	59,87		61,40	1 . 1 . 40,06	Polaris.
14 . 56 . 34,01		+ 11,40	42,49			0,75	61,16	14 . 58 . 44,12	⊙'s center.
14 . 58 . 49,87									
12 . 19 . 45,31			45,70				61,91	12 . 20 . 47,99	Venus 2 L.
13 . 0 . 9,45	18,98		36,31	33,21	61,90			1 . 1 . 38,63	Polaris SP.
13 . 52 . 45,84			46,30					13 . 53 . 48,64	Mercury 2 L.
15 . 0 . 35,77			44,43					15 . 2 . 46,81	⊙'s center.
15 . 2 . 51,95									
23 . 0 . 41,93			42,54			1,00	61,66	23 . 1 . 45,16	Ceres.
23 . 58 . 55,43			55,51	58,24	62,73			23 . 59 . 58,17	α Andromedæ.
1 . 0 . 59,83	52,00		35,81	38,10	62,29		62,66	1 . 1 . 38,51	Polaris.
1 . 56 . 57,02			57,19	59,91	62,72			1 . 57 . 59,93	α Arietis.
2 . 52 . 43,07			43,44	46,19	62,75			2 . 53 . 46,22	α Ceti.
23 . 58 . 54,40			54,48	58,23	63,75	1,02	63,75	23 . 59 . 58,23	α Andromedæ.
1 . 1 . 0,04			36,02	37,80	61,78			1 . 1 . 39,81	Polaris.
22 . 55 . 33,17		+ 12,56	33,49	38,11	64,62	1,03	63,61	22 . 56 . 38,08	α Pegasi.
23 . 58 . 53,43			53,55	58,23	64,68			23 . 59 . 58,18	α Andromedæ.
1 . 1 . 1,40	53,57		35,73	37,46	61,73		64,64	1 . 1 . 40,41	Polaris.
1 . 56 . 55,06			55,27	59,92	64,65			1 . 57 . 59,99	α Arietis.
12 . 37 . 0,55			1,05			0,41	66,18	12 . 38 . 7,45	Venus 2 L.
13 . 0 . 6,63	14,32		33,41	36,80	63,39			1 . 1 . 39,81	Polaris SP.
14 . 7 . 5,04			5,28	11,71	66,43			14 . 8 . 11,70	Arcturus.
14 . 13 . 15,69			16,27					14 . 14 . 22,69	Mercury 2 L.
15 . 16 . 50,34			59,61					15 . 19 . 6,05	⊙'s center.
15 . 19 . 7,57									
15 . 26 . 38,66			38,80	45,22	66,42			15 . 27 . 45,24	α Coronæ Bor.
17 . 26 . 13,37			13,70	20,14	66,44			17 . 27 . 20,18	α Ophiuchi.
19 . 41 . 41,23			41,61	48,18	66,57			19 . 42 . 48,13	α Aquilæ.
19 . 46 . 9,70			10,09					19 . 47 . 16,61	β Aquilæ.
20 . 7 . 51,60			52,20	58,72	66,52			20 . 8 . 58,72	α^2 Capricorni.
20 . 35 . 17,10			17,85					20 . 36 . 24,38	ψ Capricorni.
20 . 49 . 30,77			31,50					20 . 50 . 38,04	☽ 1 L.
21 . 4 . 52,23			52,32					21 . 5 . 58,86	ζ Cygni.
21 . 16 . 12,53			13,25					21 . 17 . 19,79	ζ Capricorni.
21 . 21 . 50,34			50,89	57,35	66,46			21 . 22 . 57,43	β Aquarii.
21 . 26 . 48,36			49,04					21 . 27 . 55,59	ε Capricorni.
21 . 56 . 16,74			17,23	23,74	66,51			21 . 57 . 23,78	α Aquarii.

Error of Collimation = – 1″,8.

Level Error = – 2″,80. From Nov. 10. = – 1″,81.

Meridian Error from Nov. 9, by Polaris SP. and Polaris, Nov. 9 and 10, allowing $0^s,51$ for loss of clock and change of Æ.

Meridian Error by Polaris, Nov. 12, and Polaris SP. Nov. 13, allowing $2^s,19$ for loss of clock and change of Æ, is 12″,61. The three consecutive transits, Nov. 13 and 14, give 12″,53. Instead of these, 12″,56 is used.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Nov. 14	Uranus	1,1	14,8	28,7	42,2	56,2	9,9	22 . 11 . 23,3		B.
	α Pegasi	49,2	3,7	17,3	31,1	45,0	58,9	22 . 56 . 12,9		B.
	Ceres	46,4	0,7	14,9	29,3	44,0	57,9	23 . 2 . 12,2		B.
	α Andromedæ	5,4	20,9	36,0	51,2	7,0	22,1	23 . 59 . 37,1		B.
	Polaris	36. 4,8	44.24,4	52.42,6	0.57,8	9.20,2	17.28,4	1 . 25 . 41,8		B.
	α Arietis	9,2	24,1	38,3	53,1	7,8	22,2	1 . 57 . 36,9		B.
	Venus 2 L.	40,3	54,1	7,6	21,0	34,7	48,1	12 . 42 . 2,2		B.
	Polaris SP.	......	43.31,8	51.41,4	0. 3,2	8.18,6	16.36,8	13 . 24 . 55,2	− 4 . 7,68	B.
	Arcturus	20,7	35,3	49,9	4,1	18,6	32,8	14 . 7 . 47,1		B.
	Mercury 2 L.	......	......	30,5	44,3	58,3	12,2	14 . 19 . 26,1	− 13,85	B.
Nov. 15	⊙ 1 L.	13,3	27,2	42,0	56,1	10,9	24,8	15 . 21 . 38,6		B.
	⊙ 2 L.	30,8	44,9	59,2	13,7	27,9	42,1	15 . 23 . 56,1		B.
	Arcturus	20,1	34,4	49,0	3,1	17,9	31,7	14 . 7 . 45,9		B.
Nov. 16	Venus 2 L. }	22,4	36,0	49,3	3,3	16,8	......	12 . 50	+ 13,52	B.
	Polaris SP. } ..... (cloudy)	......	......	......	0. 0,8	8.15,4	16.33,8	13 . 24 . 54,2	− 12 . 25,06	B.
Nov. 17	⊙ 1 L.	27,1	41,3	55,6	10,1	24,4	38,5	15 . 29 . 52,8		B.
	⊙ 2 L.	45,0	59,3	13,8	28,0	42,2	56,2	15 . 32 . 10,7		B.
	α Herculis ..... (very hazy)	19,6	33,7	47,8	1,2	15,7	29,1	17 . 6 . 43,0		B.
	α Ophiuchi	28,8	42,7	56,6	10,3	24,3	38,1	17 . 26 . 52,0		B.
	α Aquilæ	57,3	10,9	24,5	37,9	52,0	5,6	19 . 42 . 19,1		B.
	β Aquilæ	25,9	39,6	53,1	6,7	20,5	33,9	19 . 46 . 47,3		B.
	α^2 Capricorni	7,1	21,0	34,8	48,3	2,6	16,2	20 . 8 . 30,1		B.
	β Aquarii	6,6	20,1	33,5	47,2	1,1	14,3	21 . 22 . 27,9		B.
	α Aquarii	33,1	46,7	0,1	13,7	27,1	40,7	21 . 56 . 53,9		B.
	☽ 1 L.	44,3	58,2	12,1	26,1	40,2	53,8	23 . 35 . 7,9		B.
	Venus 2 L.	44,4	58,4	12,2	25,6	39,1	52,5	12 . 55 . 6,1		B.
	Polaris SP.	35.10,4	43.28,6	51.37,2	59.57,8	8.12,4	16.30,6	13 . 24 . 51,2		B.
	Arcturus	18,1	32,4	46,9	1,2	15,8	30,1	14 . 7 . 44,1		B.
Nov. 18	⊙ 1 L.	......	......	......	18,6	33,0	47,1	15 . 34 . 1,3	− 21,49	B.
	⊙ 2 L.	53,3	8,0	22,1	36,4	51,0	5,1	15 . 36 . 19,2		B.
	α Aquarii	32,1	45,7	59,2	12,7	26,2	39,7	21 . 56 . 53,3		B.
	Uranus	2,3	15,9	29,7	43,8	57,7	11,1	22 . 11 . 25,1		B.
	Venus 2 L. }	7,7	20,8	34,5	48,1	1,9	15,6	12 . 59 . 28,6		B.
	Polaris SP. } ..... (cloudy)	......	43.26,2	51.34,8	......	8.11,2	16.29,6	13	+ 0 . 1,33	B.
Nov. 19	Polaris ...... (very cloudy)	......	......	......	0.53,6	......	17.24,2	1 . 25 . 40,4	− 13 . 46,38	B.
	☽ 1 L. ..... (cloudy)	14,7	28,9	42,3	56,4	10,2	24,1	1 . 11 . 37,9		B.
	ο Piscium ... (very cloudy)	......	......	......	......	50,2	3,8	1 . 36 . 17,5	− 27,26	B.
	α Ceti	54,2	7,8	21,3	35,0	48,8	2,1	2 . 53 . 15,5		B.
Nov. 20	α Pegasi	44,3	58,5	12,6	25,9	40,2	53,9	22 . 56 . 7,8		B.
	α Andromedæ	0,7	16,0	31,2	46,4	2,2	16,9	23 . 59 . 31,9		B.
	ο Piscium	54,6	8,3	22,1	35,7	49,7	2,9	1 . 36 . 16,2		B.
	α Arietis	4,4	19,0	33,8	48,3	3,1	17,3	1 . 57 . 32,1		B.
	☽ 1 L.	12,6	26,1	39,9	54,0	8,1	21,9	1 . 59 . 36,0		B.
	38 Arietis	12,3	25,8	39,8	53,5	7,2	20,9	2 . 35 . 34,9		B.
	π Arietis	18,5	32,6	46,8	0,9	14,9	28,6	2 . 39 . 42,8		B.
	α Ceti	53,5	6,9	20,6	34,1	48,0	1,2	2 . 53 . 14,5		B.
	Arcturus	16,4	30,6	45,0	59,4	14,1	28,0	14 . 7 . 42,2		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, Nov. 21. 1^h.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
22 . 10 . 42,31		+ 12,56	42,92			0,41	66,18	22 . 11 . 49,48	Uranus.
22 . 55 . 31,15			31,47	38,08	66,61			22 . 56 . 38,04	α Pegasi.
23 . 1 . 29,35			30,03					23 . 2 . 36,60	Ceres.
23 . 58 . 51,38			51,50	58,21	66,71			23 . 59 . 58,09	α Andromedæ.
1 . 0 . 57,13	49,30		31,46	36,55	65,09		66,59	1 . 1 . 38,07	Polaris.
1 . 56 . 53,08			53,29	59,92	66,63			1 . 57 . 59,91	α Arietis.
12 . 41 . 21,14			21,64			1,04	66,80	12 . 42 . 28,99	Venus 2 L.
13 . 0 . 3,49	11,18		30,27	36,30	66,03			1 . 1 . 37,63	Polaris SP.
14 . 7 . 4,07			4,31	11,72	67,41			14 . 8 . 11,72	Arcturus.
14 . 18 . 44,43			45,04					14 . 19 . 52,46	Mercury 2 L.
15 . 20 . 56,13			5,50					15 . 23 . 12,97	☉'s center.
15 . 23 . 13,53									
14 . 7 . 3,16			3,40	11,74	68,34	0,94	67,79	14 . 8 . 11,74	Arcturus.
12 . 50 . 3,08			3,58			0,90	68,75	12 . 51 . 12,81	Venus 2 L.
13 . 0 . 0,99			27,77	35,28	67,51			1 . 1 . 37,01	Polaris SP.
15 . 29 . 9,97		+ 13,26	19,63					15 . 31 . 28,96	☉'s center.
15 . 31 . 27,89									
17 . 6 . 1,44			1,75	10,96	69,21			17 . 7 . 11,14	α Herculis.
17 . 26 . 10,40			10,73	20,13	69,40			17 . 27 . 20,13	α Ophiuchi.
19 . 41 . 38,19			38,57	48,15	69,58			19 . 42 . 48,06	α Aquilæ.
19 . 46 . 6,72			7,13					19 . 47 . 16,62	β Aquilæ.
20 . 7 . 48,59			49,21	58,69	69,48			20 . 8 . 58,71	α^2 Capricorni.
21 . 21 . 47,25			47,82	57,31	69,49			21 . 22 . 57,37	β Aquarii.
21 . 56 . 13,61			14,11	23,71	69,60			21 . 57 . 23,68	α Aquarii.
23 . 34 . 26,09			26,67					23 . 35 . 36,31	☽ 1 L.
12 . 54 . 25,47			26,00			1,00	69,66	12 . 55 . 36,20	Venus 2 L.
12 . 59 . 58,31	7,13		27,29	34,80	67,51			1 . 1 . 37,49	Polaris SP.
14 . 7 . 1,23			1,45	11,77	70,32			14 . 8 . 11,70	Arcturus.
15 . 33 . 18,51			28,17					15 . 35 . 38,48	☉'s center.
15 . 35 . 36,44									
21 . 56 . 12,70			13,20	23,70	70,50			21 . 57 . 23,77	α Aquarii.
22 . 10 . 43,66			44,29					22 . 11 . 54,87	Uranus.
12 . 58 . 48,17			48,70				70,66	12 . 59 . 59,90	Venus 2 L.
12 . 59 . 56,78	5,60		25,76	34,35	68,59			1 . 1 . 36,96	Polaris SP.
1 . 0 . 53,02	44,01		25,18	34,15	68,97	0,64	70,81	1 . 1 . 36,02	Polaris.
1 . 10 . 56,36			56,78					1 . 12 . 7,63	☽ 1 L.
1 . 35 . 36,57			36,95					1 . 36 . 47,80	o Piscium.
2 . 52 . 34,96			35,39	46,26	70,87			2 . 53 . 46,26	α Ceti.
22 . 55 . 26,17			26,49	38,01	71,52	0,82	70,72	22 . 56 . 37,99	α Pegasi.
23 . 58 . 46,47			46,57	58,15	71,58			23 . 59 . 58,11	α Andromedæ.
1 . 35 . 35,64			36,02				71,54	1 . 36 . 47,61	o Piscium.
1 . 56 . 48,29			48,49	59,93	71,44			1 . 58 . 0,10	α Arietis.
1 . 58 . 54,08			54,44					2 . 0 . 6,05	☽ 1 L.
2 . 34 . 53,48			53,81					2 . 36 . 5,44	38 Arietis.
2 . 39 . 0,72			0,99					2 . 40 . 12,62	π Arietis.
2 . 52 . 34,11			34,54	46,26	71,72			2 . 53 . 46,18	α Ceti.
14 . 6 . 59,39			59,61	11,83	72,22	1,18	71,54	14 . 8 . 11,85	Arcturus.

Error of Collimation = − 1″,8.

Level Error = − 1″,81. From Nov. 17. = − 2″,42.

Meridian Error by Polaris SP. Nov. 17, and Polaris, Nov. 19, allowing $2^s,03$ for clock loss and change of Æ is 13″,23; and Polaris SP. and Polaris, Nov. 18 and 19, give 13″,29, allowing $0^s,66$. Instead of these the mean is used.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Nov. 21	⊙ 1 L.} .... (very hazy)	5,8	20,0	34,8	48,9	3,4	17,7	15 . 46 . 32,0		B.
	⊙ 2 L.	24,3	38,8	53,3	7,8	22,0	36,2	15 . 48 . 51,0		B.
Nov. 23	α Aquarii............	29,2	43,0	56,2	9,9	23,3	37,1	21 . 57 . 50,2		B.
	Uranus	10,6	24,1	38,0	51,6	5.6	19,1	22 . 12 . 33,0		B.
	α Pegasi	42,7	56,7	10,4	24,2	38,3	52,1	22 . 57 . 6,1		B.
	α Andromedæ	58,5	13,9	29,2	44,6	0,1	14,9	0 . 0 . 30,3		B.
	Polaris......... (blazing)	36.56,4	45.13,2	53.33,6	1.47,4	10. 8,6	18.17,8	1 . 26 . 34,2		B.
	α Arietis .... (flaring)	2,5	17,0	32,0	46,2	1,1	15,4	1 . 58 . 30,1		B.
	38 Arietis............	10,2	23,9	37,7	51,4	5,7	18,9	2 . 36 . 32,9		B.
	π Arietis	16,5	31,0	44,9	58,9	13,1	27,0	2 . 40 . 41,0		B.
	α Ceti	51,9	5,3	19,0	32,3	46,2	59,2	2 . 54 . 12,9		B.
	A^1 Tauri	6,9	21,5	36,2	50,8	5,3	19,9	3 . 55 . 34,1		B.
	ω^2 Tauri..............	46,5	0,9	15,4	29,8	44,1	58,2	4 . 8 . 12,4		B.
	Aldebaran...... (blazing)	38,8	52,9	7,3	21,1	35,4	49,1	4 . 27 . 2,8		B.
	☽ 2 L............. (ragged)	33,1	48,3	3,6	18,7	34,1	48,9	4 . 36 . 4,1		B.
	n Tauri	31,9	46,5	1,2	15,9	30,4	44,9	5 . 9 . 59,2		B.
	β Tauri	0,1	15,4	30,9	46,2	1,7	17,0	5 . 16 . 32,1		B.
	Polaris SP.	36. 3,8	44.21,4	52.29,6	0.52,2	9. 8,6	17.26,8	13 . 25 . 43,4		B.
	Venus 2 L...... (ill-defined)	13,6	27,3	40,9	54,4	8,6	21,8	13 . 22 . 35,4		B.
	Arcturus ...... (blazing)	14,6	28,9	43,3	57,6	12,0	26,2	14 . 8 . 40,8		B.
Nov. 24	⊙ 1 L.} ...... (much motion)	42,9	57,7	12,1	26,3	40,8	55,2	16 . 0 . 9,9		B.
	⊙ 2 L.	2,6	17,0	31,3	45,8	0,3	14,9	16 . 2 . 29,1		B.
	α Herculis } ...... (faint)	14,7	28,7	42,9	56,5	10,8	24,4	17 . 7 . 38,2		B.
	α Ophiuchi	24,0	37,9	51,7	5,7	19,6	33,2	17 . 27 . 46,9		B.
	α Aquarii	28,3	41,9	55,4	9,0	22,4	35,8	21 . 57 . 49,5		B.
	Uranus	12,4	26,1	40,0	53,5	7,7	......	22 . 12	+ 13,76	B.
	α Pegasi..............	41,8	55,6	9,7	23,4	37,4	51,3	22 . 57 . 5,1		B.
	Ceres .... (very faint)	13,4	27,7	41,8	56,0	10,3	......	23 . 6	+ 14,20	B.
	n Piscium............	38,0	51,4	5,0	18,5	31,9	45,7	23 . 39 . 59,0		B.
	α Andromedæ.........	57,6	13,1	28,5	43,7	59,2	14,3	0 . 0 . 29,2		B.
	t Piscium	7,4	21,1	34,1	47,9	1,4	14,7	0 . 17 . 28,4		B.
	Polaris	36.52,5	45.10,0	53.31,8	1.46,8	10. 8,2	18.18,5	1 . 26 . 33,6		B.
	α Ceti	50,9	4,3	17,8	31,4	45,1	58,6	2 . 54 . 12,5		B.
	A^1 Tauri	5,9	20,8	35,3	49,9	4,4	18,9	3 . 55 . 33,2		B.
	ω^2 Tauri..............	45,4	59,7	14,2	28,5	43,1	57,0	4 . 8 . 11,7		B.
	Aldebaran.............	37,9	51,9	6,1	20,1	33,9	48,0	4 . 27 . 1,9		B.
	n Tauri	31,1	45,6	0,1	15,0	29,3	43,8	5 . 9 . 58,1		B.
	β Tauri...............	59,2	14,5	29,9	45,2	0,8	15,9	5 . 16 . 31,1		B.
	☽ 2 L................	18,7	34,1	49,8	5,0	20,7	36,0	5 . 30 . 51,2		B.
Nov. 25	⊙ 1 L.} ..... (very cloudy)	56,8	11,2	25,9	40,2	54,9	9,0	16 . 4 . 23,3		B.
	⊙ 2 L.	16,1	30,9	45,3	0,1	14,3	28,7	16 . 6 . 43,2		B.
Nov. 27	(*a*) Arcturus......... (cloudy)	11,1	25,1	39,7	53,6	8,4	22,2	14 . 8 . 37,0		B.
Nov. 28	⊙ 2 L....... (very cloudy)	3,1	17,2	32,0	46,1	0,9	15,1	16 . 19 . 29,8		B.
Nov. 29	α Aquilæ	46,8	0,8	14,3	28,0	41,8	54,9	19 . 43 . 8,9		B.
	α^2 Capricorni.........	57,0	10,5	24,4	38,2	52,3	6,1	20 . 9 . 20,0		B.
	α Andromedæ.. (blazing)	52,0	7,3	22,9	38,0	53,2	8,7	0 . 0 . 23,9		B.
	Polaris	36.41,2	45. 1,6	53.18,8	1.34,2	9.56,8	18. 8,4	1 . 26 . 22,6		B.

Illuminated end of Axis East. Order of Wires for Stars above the Pole, *ABCDEFG*.
The clock put forward 1ᵐ. Nov. 22. 0ʰ. The Transit levelled, Dec. 2. 2ʰ.

(*a*) Not good: the wind too loud for the clock.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
15 . 45 . 48,95 15 . 48 . 7,63		+ 13,26	} 59,01			1,18	71,54	15 . 48 . 11,33	⊙'s center.
21 . 57 . 9,85		+ 12,43	10,30	23,64	13,34	0,75	12,66	21 . 57 . 23,65	*α* Aquarii.
22 . 11 . 51,71			52,29					22 . 12 . 5,64	Uranus.
22 . 56 . 24,36			24,64	37,98	13,34			22 . 56 . 38,02	*α* Pegasi.
23 . 59 . 44,50			44,58	58,12	13,54			23 . 59 . 57,99	*α* Andromedæ.
1 . 1 . 47,31	38,30		20,65	32,58	11,93		13,41	1 . 1 . 34,09	Polaris.
1 . 57 . 46,33			46,50	59,93	13,43			1 . 57 . 59,97	*α* Arietis.
2 . 35 . 51,53			51,83					2 . 36 . 5,32	38 Arietis.
2 . 39 . 58,92			59,16					2 . 40 . 12,65	*π* Arietis.
2 . 53 . 32,40			32,80	46,28	13,48			2 . 53 . 46,30	*α* Ceti.
3 . 54 . 50,67			50,85					3 . 55 . 4,38	A^1 Tauri.
4 . 7 . 29,62			29,81					4 . 7 . 43,35	ω^2 Tauri.
4 . 26 . 21,05			21,30	34,78	13,48			4 . 26 . 34,85	Aldebaran.
4 . 35 . 18,69			18,84					4 . 35 . 32,39	☽ 2 L.
5 . 9 . 15,72			15,90					5 . 9 . 29,47	*n* Tauri.
5 . 15 . 46,20			46,28	59,87	13,59			5 . 15 . 59,85	*β* Tauri.
13 . 0 . 52,26	1,08		19,97	32,36	12,39	0,78	13,58	1 . 1 . 33,97	Polaris SP.
13 . 21 . 54,57			55,09					13 . 22 . 9,10	Venus 2 L.
14 . 7 . 57,63			57,82	11,89	14,07			14 . 8 . 11,86	Arcturus.
15 . 59 . 26,42 16 . 1 . 45,86			} 36,82					16 . 0 . 50,92	⊙'s center.
17 . 6 . 56,60			56,87	10,98	14,11			17 . 7 . 11,00	*α* Herculis.
17 . 27 . 5,57			5,87	20,13	14,26			17 . 27 . 20,02	*α* Ophiuchi.
21 . 57 . 8,90			9,35	23,62	14,27			21 . 57 . 23,64	*α* Aquarii.
22 . 11 . 53,70			54,28					22 . 12 . 8,58	Uranus.
22 . 56 . 23,47			23,75	37,96	14,21			22 . 56 . 38,07	*α* Pegasi.
23 . 5 . 56,04			56,67					23 . 6 . 11,00	Ceres.
23 . 39 . 18,50			18,99					23 . 39 . 33,34	*n* Piscium.
23 . 59 . 43,65			43,74	58,11	14,37			23 . 59 . 58,10	*α* Andromedæ.
0 . 16 . 47,86			48,29				14,36	0 . 17 . 2,66	*ι* Piscium.
1 . 1 . 45,91	36,95		19,30	32,15	12,85			1 . 1 . 33,69	Polaris.
2 . 53 . 31,51			31,91	46,28	14,37			2 . 53 . 46,36	*α* Ceti.
3 . 54 . 49,78			49,96					3 . 55 . 4,45	A^1 Tauri.
4 . 7 . 28,52			28,72					4 . 7 . 43,21	ω^2 Tauri.
4 . 26 . 19,97			20,23	34,80	14,57			4 . 26 . 34,73	Aldebaran.
5 . 9 . 14,71			14,89					5 . 9 . 29,42	*n* Tauri.
5 . 15 . 45,23			45,32	59,90	14,58			5 . 15 . 59,85	*β* Tauri.
5 . 30 . 5,07			5,08					5 . 30 . 19,62	☽ 2 L.
16 . 3 . 40,18 16 . 5 . 59,80			} 50,67			1,00	14,36	16 . 5 . 5,70	⊙'s center.
14 . 7 . 53,87		+ 10,98	54,02	11,97	17,95	1,00	17,36	14 . 8 . 11,97	Arcturus.
16 . 18 . 46,32			46,90					16 . 19 . 4,94	⊙ 2 L.
19 . 42 . 27,93			28,21	48,05	19,84	1,09	18,86	19 . 42 . 47,97	*α* Aquilæ.
20 . 8 . 38,36			38,84	58,58	19,74			20 . 8 . 58,61	α^2 Capricorni.
23 . 59 . 38,00			38,04	58,05	20,01			23 . 59 . 57,99	*α* Andromedæ.
1 . 1 . 34,80	25,84		10,25	29,37	19,12		19,95	1 . 1 . 30,25	Polaris.

Error of Collimation = − 1″,8.

Level Error = − 2″,42. From Nov. 24. = − 2″,39.

Meridian Error from Nov. 23, by Polaris, Polaris SP., and Polaris, Nov. 23 and 24.

……………… from Nov. 27, by two sets of three consecutive transits of Polaris, Nov. 29 and 30, the first giving 10″,94, and the other 11″,02. The mean is used for the whole.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Nov. 29	α Arietis	55,9	10,7	25,1	39,7	54,9	9,1	1 . 58 . 23,7		B.
	α Ceti	45,4	58,8	12,3	26,0	39,4	53,0	2 . 54 . 6,2		B.
	(a) Polaris SP.	35.54,2	44.11,8	52.22,4	0.45,2	8.56,8	17.18,6	13 . 25 . 35,2		B.
Nov. 30	Polaris (flaring)	36.35,6	44.56,4	53.15,8	1.33,2	9.55,6	18. 5,4	1 . 26 . 21,2		B.
	α Arietis (cloudy, blazing)	54,2	9,0	23,4	38,1	53,2	7,5	1 . 58 . 22,1		B.
	α Ceti	43,3	57,2	10,7	24,2	37,9	51,1	2 . 54 . 4,7		B.
	☽ 2 L. (unsteady)	43,7	58,0	12,1	25,9	40,5	54,1	10 . 44 . 8,0		B.
	n Leonis	14,7	28,9	42,9	56,4	10,9	24,1	11 . 7 . 38,1		B.
	ι Leonis	20,6	34,5	48,1	2,1	16,0	29,4	11 . 15 . 43,1		B.
	β Leonis	39,1	53,2	7,0	21,1	35,1	48,7	11 . 41 . 3,2		B.
	Polaris SP. (great motion)	35.53,2	44. 7,6	52.17,4	0.40,2	8.54,8	17.14,4	13 . 25 . 32,8		B.
Dec. 1	β Aquarii	53,7	7,0	20,8	34,3	47,9	1,4	21 . 23 . 14,8		B.
	α Aquarii	......	33,4	47,2	0,4	14,3	27,4	21 . 57 . 40,9	− 6,75	B.
	Uranus	28,9	42,5	56,3	10,2	24,0	37,4	22 . 12	+ 6,86	B.
	α Pegasi	33,4	47,3	1,4	15,1	29,4	42,9	22 . 56 . 56,5		B.
	(b) Polaris	36.47,8	44.58,6	53.18,8	1.33,0	9.59,6	18.16,4	1 . 26 . 25,0		B.
Dec. 2	☽ 2 L. (wind loud)	13,9	29,7	43,5	57,2	11,6	24,9	12 . 17 . 38,3		B.
	γ^1 Virginis	17,0	30,6	44,0	57,5	11,1	24,4	12 . 33 . 37,7		B.
	δ Virginis	16,2	29,8	43,3	56,8	10,5	24,0	12 . 47 . 37,3		B.
	(c) Spica	28,3	41,9	56,0	9,9	23,3	37,1	13 . 16 . 50,7		B.
Dec. 3	⊙ 1 L. (very cloudy)	10,4	24,9	39,7	54,2	9,4	23,6	16 . 38 . 38,0		B.
	⊙ 2 L.	31,9	46,1	1,0	15,3	29,9	44,5	16 . 40 . 59,0		B.
	α Aquilæ	41,5	55,1	8,9	22,4	36,3	49,7	19 . 43 . 3,2		B.
Dec. 5	*n* Piscium (cloudy)	......	......	50,7	4,2	17,9	31,1	23 . 39 . 44,3	−13,52	B.
	α Andromedæ	43,3	58,6	14,1	29,1	44,9	59,1	0 . 0 . 15,1		B.
	t Piscium	53,1	6,6	20,3	33,9	47,4	0,4	0 . 17 . 14,2		B.
	Polaris	36.29,4	44.47,2	53. 6,8	1.23,4	9.46,6	17.55,4	1 . 26 . 11,8		B.
	α Arietis (blazing)	47,1	2,0	16,4	30,9	46,1	0,3	1 . 58 . 15,0		B.
	α Ceti	36,5	50,1	3,7	17,0	30,8	44,0	2 . 53 . 57,4		B.
	Polaris SP. (very cloudy)	35.43,2	43.58,6	52. 8,4	0.31,8	8.46,4	17. 6,2	13	+ 4 . 8,87	B.
	Arcturus (cloudy and faint)	59,6	13,9	......	42,6	57,1	10,9	14 . 8 . 25,5	− 2,39	B.
Dec. 6	β Aquarii	46,1	59,6	13,4	27,0	40,7	54,0	21 . 23 . 7,3		B.
	α Aquarii	13,0	25,9	39,7	52,9	6,0	19,9	21 . 57 . 33,4		B.
	Uranus	44,7	58,4	12,1	26,0	40,0	53,3	22 . 13 . 7,1		B.
	α Pegasi	25,7	40,1	53,9	7,8	21,8	35,6	22 . 56 . 49,1		B.
	Arcturus	57,9	12,3	26,9	41,0	55,4	9,8	14 . 8 . 24,1		B.
	Venus 2 L.	13,6	27,4	41,3	54,9	9,4	22,6	14 . 21 . 36,5		B.
Dec. 7	α Andromedæ	40,7	56,0	11,2	26,4	42,0	57,0	0 . 0 . 12,3		B.
	Polaris	36.23,8	44.43,2	53. 2,8	1.17,8	9.41,0	17.52,0	1 . 26 . 8,4		B.
	α Arietis	44,4	59,0	13,7	28,3	42,9	57,5	1 . 58 . 11,9		B.
	α Ceti	33,9	47,2	0,9	14,4	28,0	41,2	2 . 53 . 54,6		B.
Dec. 8	⊙ 1 L.	53,4	7,9	22,9	37,4	52,2	6,8	17 . 0 . 21,1		B.
	⊙ 2 L.	15,0	29,8	44,5	59,2	14,0	28,3	17 . 2 . 43,0		B.
	α Aquilæ	34,0	47,8	1,5	15,0	28,9	42,1	19 . 42 . 55,7		B.
	β Aquarii	43,1	57,2	10,3	24,1	37,6	50,3	21 . 23 . 4,3		B.
	α Aquarii	9,7	23,1	36,9	50,2	4,0	17,1	21 . 57 . 30,7		B.
	Uranus	52,2	6,1	20,1	33,9	47,9	1,1	22 . 13 . 15,0		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, Dec. 5. 1^h.; and Dec. 14. 1^h.

(*a*) Cloudy: the 2nd and 4th wires marked doubtful.
(*b*) Very unsatisfactory: not used for meridian error.

(*c*) Blur, and wind too loud.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
1 . 57 . 39,88		+ 10,98	40,00	59,92	19,92	1,09	19,95	1 . 58 . 0,04	*α* Arietis.
2 . 53 . 25,87			26,19	46,30	20,11			2 . 53 . 46,27	*α* Ceti.
13 . 0 . 43,46	52,23		8,92	29,05		1,31	20,26	1 . 1 . 29,89	Polaris SP.
1 . 1 . 31,89	22,93		7,34	28,74	21,40		21,57	1 . 1 . 28,97	Polaris.
1 . 57 . 38,22			38,34	59,92	21,58			1 . 58 . 0,01	*α* Arietis.
2 . 53 . 24,16			24,48	46,30	21,82			2 . 53 . 46,21	*α* Ceti.
10 . 43 . 26,04			26,27			1,06	21,57	10 . 43 . 48,31	☽ 2 L.
11 . 6 . 56,57			56,79					11 . 7 . 18,85	*n* Leonis.
11 . 15 . 1,97			2,22					11 . 15 . 24,29	*ι* Leonis.
11 . 40 . 21,05			21,26	43,39	22,13			11 . 40 . 43,35	*β* Leonis.
13 . 0 . 40,06	48,83		5,52	28,41	22,89			1 . 1 . 27,66	Polaris SP.
21 . 22 . 34,27			34,72	57,16	22,44			21 . 22 . 57,23	*β* Aquarii.
21 . 57 . 0,52			0,91	23,54	22,63			21 . 57 . 23,45	*α* Aquarii.
22 . 12 . 10,08			10,58					22 . 12 . 33,13	Uranus.
22 . 56 . 15,14			15,38	37,89	22,51			22 . 56 . 37,96	*α* Pegasi.
1 . 1 . 37,03			13,14	28,08	14,94		22,63	1 . 1 . 35,82	Polaris.
12 . 16 . 57,02			57,38			1,47	24,18	12 . 17 . 22,31	☽ 2 L.
12 . 32 . 57,47			57,86					12 . 33 . 22,81	γ^1 Virginis.
12 . 46 . 56,84			57,18					12 . 47 . 22,14	*δ* Virginis.
13 . 16 . 9,60			10,07	35,16	25,09			13 . 16 . 35,06	Spica.
16 . 37 . 54,31			5,45					16 . 39 . 30,65	⊙'s center.
16 . 40 . 15,39									
19 . 42 . 22,44			22,74	48,03	25,29			19 . 42 . 48,13	*α* Aquilæ.
23 . 39 . 4,12		+ 11,65	4,57			1,38	27,27	23 . 39 . 33,20	*n* Piscium.
23 . 59 . 29,17			29,25	57,98	28,73			23 . 59 . 57,90	*α* Andromedæ.
0 . 16 . 33,70			34,10				28,65	0 . 17 . 2,77	*t* Piscium.
1 . 1 . 22,94	14,64		58,10	25,74	27,64			1 . 1 . 26,81	Polaris.
1 . 57 . 31,11			31,27	59,90	28,63			1 . 58 . 0,03	*α* Arietis.
2 . 53 . 17,07			17,44	46,31	28,87			2 . 53 . 46,26	*α* Ceti.
13 . 0 . 31,30	39,43		57,14	25,48	28,34	1,39	28,62	1 . 1 . 26,52	Polaris SP.
14 . 7 . 42,54			42,73	12,17	29,44			14 . 8 . 12,17	Arcturus.
21 . 22 . 26,87			27,36	57,11	29,75			21 . 22 . 57,22	*β* Aquarii.
21 . 56 . 52,97			53,40	23,49	30,09			21 . 57 . 23,29	*α* Aquarii.
22 . 12 . 25,94			26,48					22 . 12 . 56,38	Uranus.
22 . 56 . 7,72			7,99	37,83	29,84			22 . 56 . 37,94	*α* Pegasi.
14 . 7 . 41,05		+ 11,42	41,23	12,19	30,96	1,44	30,00	14 . 8 . 12,08	Arcturus.
14 . 20 . 55,10			55,63					14 . 21 . 26,49	Venus 2 L.
23 . 59 . 26,52			26,59	57,96	31,37			23 . 59 . 58,03	*α* Andromedæ.
1 . 1 . 18,43	10,13		53,91	24,69	30,78		31,44	1 . 1 . 25,41	Polaris.
1 . 57 . 28,25			28,40	59,89	31,49			1 . 57 . 59,96	*α* Arietis.
2 . 53 . 14,31			14,67	46,31	31,64			2 . 53 . 46,28	*α* Ceti.
16 . 59 . 37,39			48,88			1,20	31,69	17 . 1 . 21,42	⊙'s center.
17 . 1 . 59,12									
19 . 42 . 15,00			15,31	48,00	32,69			19 . 42 . 47,99	*α* Aquilæ.
21 . 22 . 23,84			24,30	57,09	32,79			21 . 22 . 57,06	*β* Aquarii.
21 . 56 . 50,24			50,65	23,47	32,82			21 . 57 . 23,44	*α* Aquarii.
22 . 12 . 33,76			34,28					22 . 13 . 7,08	Uranus.

Error of Collimation = – 1″,8.

Level Error = – 2″,39. From Dec. 1. = – 2″,05. From Dec. 8. = – 2″,34.

Meridian Error from Dec. 5, by Polaris and Polaris SP. on that day, allowing $0^{s},96$ for loss of clock and change of Æ.

Meridian Error from Arcturus, Dec. 6, by Polaris SP., Dec. 5, and Polaris, Dec. 7, allowing $2^{s},89$ for clock loss and change of Æ.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Dec. 8	α Pegasi..............	23,0	36,7	50,9	4,8	19,1	32,6	22 . 56 . 46,4		B.
	n Piscium............	19,2	32,9	46,2	59,9	13,7	26,9	23 . 39 . 40,2		B.
	α Andromedæ.........	38,9	54,3	9,5	25,1	40,2	55,3	0 . 0 . 10,6		B.
	t Piscium............	48,7	2,4	16,0	29,2	43,0	56,1	0 . 17 . 9,8		B.
	Polaris................	36.24,6	44.42,2	53. 2,8	1.18,6	9.41,8	17.51,2	1 . 26 . 6,6		B.
	α Arietis.............	42,9	57,9	12,2	27,0	41,6	56,1	1 . 58 . 10,7		B.
	α Ceti...............	32,2	45,9	59,7	13,0	26,6	40,0	2 . 53 . 53,3		B.
Dec. 9	Uranus...............	......	10,8	24,2	38,1	52,3	5,8	22 . 13	− 0,15	B.
	α Pegasi.............	21,9	36,0	49,8	3,9	17,7	31,4	22 . 56 . 45,0		B.
	α Andromedæ.........	37,9	53,1	8,5	23,9	39,1	54,0	0 . 0 . 9,3		B.
	Polaris..............	36.24,4	44.41,8	53. 2,4	1.18,2	9.40,6	17.48,0	1 . 26 . 4,8		B.
	α Arietis............	42,0	56,4	11,1	25,8	40,2	54,9	1 . 58 . 9,5		B.
	α Ceti...............	31,2	44,4	58,1	11,8	25,3	38,4	2 . 53 . 52,1		B.
	Polaris SP.	......	......	......	0.21,6	8.36,8	16.56,0	13 . 25 . 16,2	− 12 . 25,90	B.
	Arcturus.............	54,2	8,9	23,1	37,3	51,8	6,1	14 . 8 . 20,2		B.
	Venus 2 L.	14,6	28,3	42,6	56,5	10,8	24,4	14 . 35 . 38,2		B.
Dec. 10	⊙ 1 L.	38,8	53,4	8,2	23,0	37,9	52,1	17 . 9 . 7,0		B.
	⊙ 2 L.	1,0	15,6	30,1	45,0	0,0	14,1	17 . 11 . 29,0		B.
	α Aquilæ............	31,6	45,7	59,1	12,9	26,7	40,0	19 . 42 . 53,5		B.
	α Pegasi.............	20,7	34,9	48,9	3,0	16,9	30,3	22 . 56 . 44,0		B.
	α Andromedæ........	37,1	52,2	7,7	22,9	38,3	53,1	0 . 0 . 8,5		B.
	Polaris...............	36.23,0	......	52.59,8	1.16,4	9.39,6	17.49,8	1 . 26 . 4,4	− 2 . 45,70	B.
Dec. 12	Arcturus.........(cloudy)	51,0	5,7	20,0	34,0	48,7	3,0	14 . 8 . 16,9		B.
	Venus 2 L... (very cloudy)	26,4	40,3	54,5	8,6	22,7	36,4	14 . 49	+ 6,95	B.
Dec. 13	⊙ 1 L.} ..... (very cloudy)	50,0	4,6	19,4	33,9	49,1	3,8	17 . 22 . 18,1		B.
	⊙ 2 L.}	12,1	27,0	41,5	56,1	11,0	25,9	17 . 24 . 40,3		B.
	α Aquilæ............	28,5	42,0	55,9	9,3	23,1	36,8	19 . 42 . 50,1		B.
	μ Capricorni	2,2	16,2	30,0	43,9	57,9	12,0	21 . 44 . 25,8		B.
	(a) ι Aquarii............	15,7	30,0	43,7	57,6	11,6	24,9	21 . 57 . 39,1		B.
	Uranus..............	16,4	30,3	43,9	57,8	11,8	25,3	22 . 13 . 39,0		B.
	☽ 1 L................	9,9	24,2	38,8	53,1	7,9	21,7	22 . 26 . 36,0		B.
	(b) δ Aquarii............	37,3	51,9	5,9	20,0	34,1	48,2	22 . 46 . 2,1		B.
	α Pegasi.............	17,1	31,3	45,1	59,1	13,3	27,1	22 . 56 . 40,9		B.
	ψ^3 Aquarii............	8,1	21,6	35,3	49,1	3,1	16,4	23 . 10 . 30,2		B.
	α Andromedæ.. (blazing)	33,3	49,0	4,1	19,3	35,0	50,0	0 . 0 . 5,1		B.
	Polaris...........(flaring)	36.15,4	44.24,2	52.52,6	1. 7,8	9.29,2	17.41,4	1 . 25 . 57,6		B.
	α Arietis............	37,4	52,1	6,9	21,2	36,2	50,4	1 . 58 . 5,2		B.
	β Ursæ Minoris SP....	47.57,0	48.48,6	49.39,0	50.31,2	51.22,0	52.13,8	2 . 53 . 5,6		C.
	Polaris SP... (very unsteady)	......	......	......	0.12,4	8.31,2	16.48,6	13 . 25 . 7,8	− 12 . 26,01	B.
	Arcturus.............	49,9	4,3	18,9	33,1	47,7	2,1	14 . 8 . 16,1		B.
	Venus 2 L. (hazy, ill-defined)	12,4	26,3	40,6	54,3	8,7	22,2	14 . 54 . 36,2		B.
Dec. 14	β Aquarii ....(cloudy)	35,9	49,8	3,3	16,9	30,6	43,9	21 . 22 . 57,5		B.
	μ Capricorni. (very cloudy)	1,1	14,7	28,9	42,6	56,8	10,7	21 . 44 . 24,2		B.
	α Arietis.............	36,0	50,8	5,4	20,1	34,9	49,2	1 . 58 . 3,7		B.
	α Ceti....... (very cloudy)	25,6	......	52,8	......	......	33,1	2 . 53 . 46,3	− 3,34	B.
	Venus 2 L...(ill-defined and hazy)	......	13,7	28,0	41,4	55,7	9,4	14 . 59 . 23,7	− 7,00	B.
	α Herculis............	28,3	2,6	16,2	30,0	44,2	58,0	17 . 7 . 12,0		B.
	α Ophiuchi...........	58,0	11,7	25,7	39,2	53,3	6,9	17 . 27 . 20,8		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.

(*a*) Confused.

(*b*) The field badly illumined.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0^h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	"	s.	s.	s.	s.	s.	h. m. s.	
22 . 56 . 4,79		+ 11,42	5,03	37,81	32,78	1,20	31,69	22 . 56 . 37,87	α Pegasi.
23 . 38 . 59,86			0,29					23 . 39 . 33,16	*n* Piscium.
23 . 59 . 24,84			24,89	57,94	33,05			23 . 59 . 57,78	α Andromedæ.
0 . 16 . 29,32			29,69				32,89	0 . 17 . 2,60	*t* Piscium.
1 . 1 . 18,26			53,18	24,14	30,96			1 . 1 . 26,12	Polaris.
1 . 57 . 26,92			27,05	59,89	32,84			1 . 58 . 0,04	α Arietis.
2 . 53 . 12,96			13,31	46,31	33,00			2 . 53 . 46,34	α Ceti.
22 . 12 . 38,09		+ 12,77	38,69			1,02	33,00	22 . 13 . 12,63	Uranus.
22 . 56 . 3,67			3,97	37,79	33,82			22 . 56 . 37,94	α Pegasi.
23 . 59 . 23,68			23,78	57,93	34,15			23 . 59 . 57,80	α Andromedæ.
1 . 1 . 17,17	8,31		50,18	23,54	33,36		34,02	1 . 1 . 24,24	Polaris.
1 . 57 . 25,70			25,88	59,88	34,00			1 . 57 . 59,98	α Arietis.
2 . 53 . 11,61			12,03	46,31	34,28			2 . 53 . 46,17	α Ceti.
13 . 0 . 21.75	30,42		49,83	23,21	33,38	1,00	33,99	1 . 1 . 24,36	Polaris SP.
14 . 7 . 37,37			37,59	12,27	34,68			14 . 8 . 12,17	Arcturus.
14 . 34 . 56,49			57,09					14 . 35 . 31,69	Venus 2 L.
17 . 8 . 22,91			} 34,66					17 . 10 . 9,36	☉'s center.
17 . 10 . 44,97									
19 . 42 . 12,78			13,15	48,00	34,85			19 . 42 . 47,96	α Aquilæ.
22 . 56 . 2,67			2,97	37,78	34,81			22 . 56 . 37,91	α Pegasi.
23 . 59 . 22,83			22,93	57,92	34,99			23 . 59 . 57,92	α Andromedæ.
1 . 1 . 16,46	7,60		49,47	22,87	33,40		34,99	1 . 1 . 24,50	Polaris.
14 . 7 . 34,19		+ 11,67	34,37	12,35	37,98	1,17	37,25	14 . 8 . 12,31	Arcturus.
14 . 49 . 8,43			8,98					14 . 49 . 46,95	Venus 2 L.
17 . 21 . 34,13			} 45,85					17 . 23 . 23,95	☉'s center.
17 . 23 . 56,27									
19 . 42 . 9,39			9,71	47,99	38,28			19 . 42 . 47,92	α Aquilæ.
21 . 43 . 44,00			44,55					21 . 44 . 22,86	μ Capricorni.
21 . 56 . 57,52			58,09					21 . 57 . 36,41	ι Aquarii.
22 . 12 . 57,79			58,33					22 . 13 . 36,66	Uranus.
22 . 25 . 53,08			53,66					22 . 26 . 32,00	☽ 1 L.
22 . 45 . 19,92			20,50					22 . 45 . 58,86	δ Aquarii.
22 . 55 . 59,13			59,38	37,75	38,37			22 . 56 . 37,75	α Pegasi.
23 . 9 . 49,12			49,64					23 . 10 . 28,02	ψ^3 Aquarii.
23 . 59 . 19,40			19,46	57,88	38,42			23 . 59 . 57,88	α Andromedæ.
1 . 1 . 6,89	58,03		41,46	20,59	39,13		38,42	1 . 1 . 19,93	Polaris.
1 . 57 . 21,34			21,48	59,86	38,38			1 . 57 . 59,99	α Arietis.
2 . 50 . 31,03			34,24					2 . 51 . 12,80	β Ursæ Min. SP.
13 . 0 . 13,99	22,66		40,40	20,20	39,80	1,26	38,42	1 . 1 . 19,50	Polaris SP.
14 . 7 . 33,15			33,33	12,38	39,05			14 . 8 . 12,49	Arcturus.
14 . 53 . 54,39			54,96					14 . 54 . 34,16	Venus 2 L.
21 . 22 . 16,84			17,32	57,05	39,73			21 . 22 . 56,86	β Aquarii.
21 . 43 . 42,71			43,26					21 . 44 . 22,82	μ Capricorni.
1 . 57 . 20,01			20,15	59,86	39,71		39,68	1 . 57 . 59,93	α Arietis.
2 . 53 . 6,11			6,47	46,30	39,83			2 . 53 . 46,30	α Ceti.
14 . 58 . 41,65		+ 11,77	42,22			1,16	39,78	14 . 59 . 22,72	Venus 2 L.
17 . 6 . 30,18			30,42	11,14	40,72			17 . 7 . 11,03	α Herculis.
17 . 26 . 39,38			39,66	20,26	40,60			17 . 27 . 20,28	α Ophiuchi.

Error of Collimation = − 1″,8.

Level Error = − 2″,34.

Meridian Error from Dec. 9, by Polaris, Polaris SP., and Polaris, Dec. 9 and 10.

.... from Dec. 12, by Polaris and Polaris SP., Dec. 13, allowing $1^s,05$ for loss of clock and change of Æ.

.... from Venus, Dec. 14, by Polaris, Polaris SP., and Polaris, Dec. 15 and 16.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Dec. 15	⊙ 1 L.} ... (very great motion)	38,2	53,0	8,1	22,7	37,7	51,8	17 . 31 . 6,5		B.
	⊙ 2 L.	1,1	15,8	30,0	44,9	0,0	14,3	17 . 33 . 29,0		B.
	α Aquilæ	25,9	39,8	53,2	7,0	20,8	34,1	19 . 42 . 47,7		B.
	α Pegasi......... (cloud)	......	28,8	42,8	57,1	10,9	24,1	22 . 56 . 38,3	− 6,96	B.
	ψ^3 Aquarii} ...... (cloudy)	5,4	19,1	32,9	46,4	0,7	13,9	23 . 10 . 27,8		B.
	p Piscium	57,1	11,8	24,5	37,8	51,1	5,0	23 . 50 . 18,2		B.
	α Andromedæ.........	30,8	46,2	1,8	16,9	32,3	47,1	0 . 0 . 2,6		B.
	(a) Polaris	36. 6,6	44.29,2	52.48,4	0.59,8	9.26,4	17.35,2	1	+ 4 . 8,04	B.
	Polaris SP.............	35.21,8	43.37,4	51.45,6	0. 9,4	8.24,2	16.44,8	13 . 25 . 4,4		B.
	Arcturus	47,9	2,1	16,3	30,8	45,1	59,1	14 . 8 . 13,4		B.
	Venus 2 L. ..... (hazy)	47,8	2,3	15,9	30,3	44,3	57,8	15 . 4 . 12,3		B.
	α Ophiuchi. . (hazy and faint)	57,0	10,7	24,5	38,0	52,2	6,0	17 . 27 . 19,6		B.
Dec. 16	⊙ 1 L.} .....(serrated limbs)	2,9	17,7	32,3	47,1	2,1	16,4	17 . 35 . 31,1		B.
	⊙ 2 L.	25,3	40,1	55,1	9,9	25,0	39,1	17 . 37 . 53,8		B.
	Uranus	33,0	46,9	0,4	14,1	28,0	41,6	22 . 13 . 55,2		B.
	α Pegasi.............	14,0	27,9	41,7	55,4	9,7	23,2	22 . 56 . 37,1		B.
	α Andromedæ. .(very cloudy)	29,9	45,1	0,3	......	31,1	45,9	23 . 59	+ 9,15	B.
	m Ceti	......	......	44,8	58,2	12,1	25,0	0 . 44 . 38,3	− 13,50	B.
	☽ 1 L.	4,9	18,3	32,3	46,0	0,1	13,9	0 . 57 . 27,2		B.
	Polaris	36. 9,8	......	52.47,2	1. 3,6	9.26,8	17.35,4	1 . 25 . 53,6	− 2 . 45,74	B.
	μ Piscium	16,2	29,4	43,0	56,2	10,1	23,3	1 . 21 . 37,2		B.
	ν Piscium	34,1	47,7	1,2	14,7	28,1	41,8	1 . 32 . 55,2		B.
	α Arietis} .... (cloudy)	33,7	48,8	3,1	18,0	32,4	46,9	1 . 58 . 1,3		B.
	α Ceti	22,9	36,9	50,2	3,9	17,2	30,5	2 . 53 . 44,2		B.
	Arcturus	16,5	0,8	15,0	29,3	44,2	58,0	14 . 8 . 12,2		B.
	(b) Venus 2 L.	37,3	51,9	5,7	19,9	35,0	48,7	15 . 9 . 2,8		B.
	α Ophiuchi	55,7	9,3	23,1	37,0	51,0	4,6	17 . 27 . 18,5		B.
Dec. 17	⊙ 1 L.} .... (unsteady)	27,9	42,7	57,4	12,2	27,0	41,2	17 . 39 . 56,1		B.
	⊙ 2 L.	50,3	5,1	20,0	34,5	49,3	4,0	17 . 42 . 19,0		B.
	μ Piscium ....(cloudy)	14,6	28,3	......	55,4	9,2	22,4	1 . 21 . 36,0	− 2,26	B.
Dec. 18	☽ 1 L................	46,0	0,1	14,6	28,6	43,0	57,2	2 . 33 . 11,4		B.
	α Ceti........... (cloudy)	20,8	34,3	47,9	......	15,0	28,2	2 . 53 . 41,4		B.
	Aldebaran	8,0	21,9	36,0	50,0	4,3	17,9	4 . 26 . 32,0		B.
Dec. 19	α Arietis	29,7	44,8	59,2	13,7	28,4	43,1	1 . 57 . 57,2		B.
	α Ceti	19.2	......	46,3	......	13,4	26,9	2 . 53 . 40,2	− 5,40	B.
	Venus 2 L.	13,1	27,1	41,3	55,4	9,6	23,4	15 . 23 . 37,5		B.
	α Ophiuchi	51,8	5,2	19,0	32,9	47,0	0,5	17 . 27 . 14,3		B.
Dec. 20	⊙ 1 L................	43,0	57,3	11,8	26,9	42,1	56,5	17 . 53 . 11,1		B.
	⊙ 2 L................	5,3	20,1	35,0	50,1	5,0	19,1	17 . 55 . 34,1		B.
	α Aquilæ	19,3	32,0	46,6	0,2	14,3	27,7	19 . 42 . 41,1		B.
	β Aquarii	28,3	42,0	55,6	8,9	22,7	36,1	21 . 22 . 49,7		B.
	α Arietis	28,2	43,1	57,6	12,0	26,9	41,1	1 . 57 . 55,7		B.
	ε Arietis	23,2	37,8	52,1	6,7	21,1	35,7	2 . 49 . 49,7		B.
	α Ceti	17,7	31,2	44,9	58,1	11,8	24,9	2 . 53 . 38,8		B.
	δ Arietis	48,7	2,9	17,4	31,6	46,1	59,9	3 . 2 . 14,0		B.
	☽ 1 L........ (rather ragged)	19,2	34,3	49,7	4,8	19,9	34,6	4 . 14 . 49,8		B.
	Aldebaran	5,1	19,0	33,1	46,9	1,3	15,1	4 . 26 . 29,1		B.
	τ Tauri	57,1	11,7	26,3	41,0	55,6	10,0	4 . 32 . 24,6		B.
	Rigel	14,1	28,2	41,9	54,9	8,9	22,1	5 . 6 . 35,9		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.
The Transit levelled, Dec. 19. 1^h.

(a) Very hazy: almost a guess, none of the wires satisfactory.

(b) Very ill-defined. The 2nd wire was set down 52,9, plainly 1^s too great.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
17 . 30 . 22,57 17 . 32 . 45,02		+11,77	34,43			1,16	39,78	17 . 32 . 15,06	☉'s center.
19 . 42 . 6,93			7,23	47,98	40,75			19 . 42 . 47,96	α Aquilæ.
22 . 55 . 56,71			56,96	37,72	40,76			22 . 56 . 37,85	α Pegasi.
23 . 9 . 46,60			47,12					23 . 10 . 28,02	ψ^3 Aquarii.
23 . 49 . 37,93			38,37					23 . 50 . 19,30	p Piscium.
23 . 59 . 16,82			16,86	57,85	40,99			23 . 59 . 57,80	α Andromedæ.
1 . 1 . 2,31	52,85		36,14	19,09	42,95		40,94	1 . 1 . 17,13	Polaris.
13 . 0 . 9,66	18,91		36,80	18,73	41,93	1,25	40,80	1 . 1 . 18,28	Polaris SP.
14 . 7 . 30,67			30,83	12,43	41,60			14 . 8 . 12,36	Arcturus.
15 . 3 . 30,10			30,66					15 . 4 . 12,24	Venus 2 L.
17 . 26 . 38,29			38,55	20,27	41,72			17 . 27 . 20,26	α Ophiuchi.
17 . 34 . 47,09 17 . 37 . 9,76			59,06					17 . 36 . 40,78	☉'s center.
22 . 13 . 14,17			14,70					22 . 13 . 56,66	Uranus.
22 . 55 . 55,57			55,82	37,71	41,89			22 . 56 . 37,81	α Pegasi.
23 . 59 . 15,61			15,65	57,84	42,19			23 . 59 . 57,70	α Andromedæ.
0 . 43 . 58,18			58,61				42,05	0 . 44 . 40,70	m Ceti.
0 . 56 . 46,10			46,46					0 . 57 . 28,56	☽ 1 L.
1 . 1 . 3,66	54,20		37,49	18,38	40,89			1 . 1 . 19,60	Polaris.
1 . 20 . 56,49			56,83					1 . 21 . 38,95	μ Piscium.
1 . 32 . 14,69			15,03					1 . 32 . 57,16	ν Piscium.
1 . 57 . 17,75			17,87	59,85	41,98			1 . 58 . 0,02	α Arietis.
2 . 53 . 3,69			4,04	46,30	42,26			2 . 53 . 46,24	α Ceti.
14 . 7 . 29,43			29,59	12,46	42,87	1,29	42,08	14 . 8 . 12,43	Arcturus.
15 . 8 . 20,19			20,76					15 . 9 . 3,65	Venus 2 L.
17 . 26 . 37,03			37,29	20,28	42,99			17 . 27 . 20,31	α Ophiuchi.
17 . 39 . 12,07 17 . 41 . 34,60			23,97					17 . 41 . 7,00	☉'s center.
1 . 20 . 55,39			55,73				43,37	1 . 21 . 39,17	μ Piscium.
2 . 32 . 28,70			28,92			1,35	44,53	2 . 33 . 13,59	☽ 1 L.
2 . 53 . 1,27			1,62	46,29	44,67			2 . 53 . 46,31	α Ceti.
4 . 25 . 50,01			50,22	35,03	44,81			4 . 26 . 35,00	Aldebaran.
1 . 57 . 13,73			13,85	59,83	45,98	1,52	45,91	1 . 57 . 59,88	α Arietis.
2 . 52 . 59,80			0,15	46,29	46,14			2 . 53 . 46,24	α Ceti.
15 . 22 . 55,34			55,92			1,35	46,18	15 . 23 . 42,96	Venus 2 L.
17 . 26 . 32,96			33,22	20,33	47,11			17 . 27 . 20,38	α Ophiuchi.
17 . 52 . 26,96 17 . 54 . 49,81			39,02					17 . 54 . 26,21	☉'s center.
19 . 42 . 0,17			0,47	47,99	47,52			19 . 42 . 47,76	α Aquilæ.
21 . 22 . 9,05			9,52	57,01	47,49			21 . 22 . 56,90	β Aquarii.
1 . 57 . 12,08			12,20	59,82	47,62		47,53	1 . 57 . 59,84	α Arietis.
2 . 49 . 6,62			6,76					2 . 49 . 54,45	ε Arietis.
2 . 52 . 58,20			58,55	46,28	47,73			2 . 53 . 46,24	α Ceti.
3 . 1 . 31,51			31,68					3 . 2 . 19,38	δ Arietis.
4 . 14 . 4,61			4,73					4 . 14 . 52,50	☽ 1 L.
4 . 25 . 47,09			47,30	35,04	47,74			4 . 26 . 35,08	Aldebaran.
4 . 31 . 40,90			41,02					4 . 32 . 28,80	τ Tauri.
5 . 5 . 55,14			55,62	43,21	47,59			5 . 6 . 43,44	Rigel.

Error of Collimation = − 1″,8.

Level Error from Dec. 15. = − 2″,65.

Month and Day.	NAME OF STAR or PLANET, and Circumstances of Observation.	I.	II.	III.	IV.	V.	VI.	VII. Wire.	Correction to Mean of Wires Observed.	Observer.
		m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	h. m. s.	m. s.	
Dec. 21	α Pegasi	7,1	20,9	34,8	48,9	3,0	16,4	22 . 56 . 30,2		B.
	α Arietis	26,9	41,5	56,2	10,8	25,6	40,0	1 . 57 . 54,8		B.
Dec. 22	Rigel .... (cloudy)	10,7	24,9	38,8	52,3	6,6	19,6	5 . 6 . 33,1		B.
	β Tauri	23,7	39,1	54,2	9,9	25,2	40,3	5 . 15 . 55,7		B.
	(a) α Ophiuchi .... (very cloudy)	......	1,3	15,0	29,0	42,9	......	17 . 26	+ 6,87	B.
Dec. 23	⊙ 1 L. ..... (great motion)	58,5	13,2	27,9	42,8	57,8	12,2	18 . 6 . 26,9		B.
	⊙ 2 L.	21,1	36,0	50,7	5,4	20,3	35,0	18 . 8 . 49,3		B.
	δ Ursæ Minoris ... (steady)	12.35,2	16.20,6	20. 9,4	23.55,2	27.44,6	31.26,8	18 . 35 . 12,6		B.
	α Aquilæ	15,4	28,9	42,5	56,1	10,0	23,6	19 . 42 . 37,1		B.
	Uranus .... (very faint)	15,8	29,4	43,1	56,9	11,0	......	22 . 14	+ 13,74	B.
	α Andromedæ	20,3	35,7	51,0	6,3	21,6	36,9	23 . 59 . 52,2		B.
	α Orionis ..... (blazing)	22,8	38,0	53,4	8,9	24,1	39,2	5 . 15 . 54,8		B.
	β Tauri..	49,2	2,3	16,0	29,8	43,3	56,8	5 . 46 . 10,5		B.
	δ Ursæ Minoris SP....	12.10,2	15.56,4	19.37,8	23.27,4	27.12,2	31. 1,2	6 . 34 . 47,8		B.
	☽ 2 L. .... (unsteady)	6,4	22,0	37,3	53,0	8,9	24,1	7 . 1 . 39,3		B.
	Castor ...... (blazing)	32,6	48,8	4,9	20,5	36,6	52,4	7 . 24 . 8,3		B.
	Procyon	13,8	27,3	41,1	54,7	8,2	21,3	7 . 30 . 35,1		B.
	Pollux	42,8	58,3	13,7	28,9	44,5	59,3	7 . 35 . 14,9		B.
Dec. 24	⊙ 1 L.	......	......	......	......	23,3	37,8	18 . 10 . 52,2	− 29,49	B.
	⊙ 2 L.	47,1	1,3	16,1	31,0	45,9	0,1	18 . 13 . 15,0		B.
	δ Ursæ Minoris	......	16.19,4	20. 7,6	23.53,8	27.42,4	31.25,6	18 . 35 . 11,2	− 1 . 53,39	B.
	α Aquilæ ...... (very hazy)	14,2	28,0	41,8	55,1	9,0	22,3	19 . 42 . 36,0		B.
	Aldebaran	0,1	14,0	27,8	42,1	56,3	10,2	4 . 26 . 24,2		B.
	Rigel	9,3	22,9	37,0	50,2	3,9	17,3	5 . 6 . 31,1		B.
	β Tauri	21,7	37,2	52,2	7,7	23,1	38,1	5 . 15 . 53,2		B.
	α Orionis	48,5	1,8	15,2	29,0	42,3	55,8	5 . 46 . 9,3		B.
	Castor	31,7	48,0	3,7	19,6	35,4	51,3	7 . 24 . 7,4		B.
	Procyon	13,0	26,3	40,0	53,2	7,1	20,2	7 . 30 . 34,1		B.
	Pollux	42,0	57,1	12,7	27,9	43,2	58,3	7 . 35 . 13,9		B.
	☽ 2 L.	30,9	46,0	1,3	16,7	32,1	47,2	7 . 56 . 2,5		B.
	η Cancri	40,7	55,3	9,8	24,2	38,7	52,8	8 . 23 . 7,2		B.
	γ Cancri	14,7	29,0	43,8	58,1	13,1	27,2	8 . 33 . 41,6		B.

ILLUMINATED END OF AXIS EAST. Order of Wires for Stars above the Pole, *ABCDEFG*.

(a) The mean temperature of Dec. 23 and 24 was 33°,5, while that of Dec. 19 was 46°,2. The change took place on the morning of Dec. 23.

Concluded Transit over the Mean of the seven Wires.	Seconds of Transit corr. for Errors of Level and Collimation.	Meridian Error.	Seconds of Transit corrected.	Tabular R.A. of Known Stars.	Clock apparently Slow.	Adopted losing Rate.	Clock Slow at 0h.	Apparent R.A. from the Observation.	NAME OF STAR or PLANET.
h. m. s.	s.	″	s.	s.	s.	s.	s.	h. m. s.	
22 . 55 . 48,76		+ 11,77	49,01	37,66	48,65	1,33	47,40	22 . 56 . 37,68	α Pegasi.
1 . 57 . 10,83			10,95	59,81	48,86		48,73	1 . 57 . 59,79	α Arietis.
5 . 5 . 52,28			52,76	43,23	50,47	1,40	50,21	5 . 6 . 43,27	Rigel.
5 . 15 . 9,73			9,77	0,32	50,55			5 . 16 . 0,29	β Tauri.
17 . 26 . 28,92		+ 13,68	29,29	20,37	51,08	1,02	50,32	17 . 27 . 20,35	α Ophiuchi.
18 . 5 . 42,75			54,86					18 . 7 . 45,95	⊙'s center.
18 . 8 . 5,40									
18 . 23 . 54,91	50,93		42,28	33,28	51,00			18 . 24 . 33,38	δ Ursæ Minoris.
19 . 41 . 56,23			56,65	47,99	51,34			19 . 42 . 47,80	α Aquilæ.
22 . 13 . 56,98			57,65					22 . 14 . 48,91	Uranus.
23 . 59 . 6,29			6,42	57,74	51,32			23 . 59 . 57,76	α Andromedæ.
5 . 15 . 8,75			8,88	0,33	51,45		51,34	5 . 16 . 0,44	β Tauri.
5 . 45 . 29,70			30,14	21,71	51,57			5 . 46 . 21,72	α Orionis.
6 . 23 . 27,57	31,37		41,45	33,22	51,77			18 . 24 . 33,06	δ Ursæ Min. SP.
7 . 0 . 53,00			53,16					7 . 1 . 44,80	☽ 2 L.
7 . 23 . 20,58			20,65	12,27	51,62			7 . 24 . 12,30	Castor.
7 . 29 . 54,50			54,95	46,60	51,65			7 . 30 . 46,61	Procyon.
7 . 34 . 28,92			29,04	20,73	51,69			7 . 35 . 20,70	Pollux.
18 . 10 . 8,28			20,40			0,95	51,43	18 . 12 . 12,55	⊙'s center.
18 . 12 . 30,93									
18 . 23 . 53,28	49,30		40,65	33,15	52,50			18 . 24 . 32,81	δ Ursæ Minoris.
19 . 41 . 55,20			55,62	47,99	52,37			19 . 42 . 47,83	α Aquilæ.
4 . 25 . 42,10			42,42	35,05	52,63		52,38	4 . 26 . 34,98	Aldebaran.
5 . 5 . 50,24			50,86	43,24	52,38			5 . 6 . 43,44	Rigel.
5 . 15 . 7,60			7,73	0,34	52,61			5 . 16 . 0,32	β Tauri.
5 . 45 . 28,85			20,29	21,72	52,43			5 . 46 . 21,90	α Orionis.
7 . 23 . 19,59			19,66	12,29	52,63			7 . 24 . 12,33	Castor.
7 . 29 . 53,41			53,86	46,62	52,76			7 . 30 . 46,54	Procyon.
7 . 34 . 27,87			27,99	20,75	52,76			7 . 35 . 20,67	Pollux.
7 . 55 . 16,67			16,86					7 . 56 . 9,55	☽ 2 L.
8 . 22 . 24,10			24,34					8 . 23 . 17,05	η Cancri.
8 . 32 . 58,22			58,46					8 . 33 . 51,18	γ Cancri.

Error of Collimation = − 1″,8.

Level Error = − 2″,65. From α Ophiuchi, Dec. 22. = − 2″,13.

This last level error could not be obtained directly on account of the length of the bubble: it is inferred from that of Dec. 19, by allowing 0″,52 for a depression of 12°,7 of temperature.

Meridian Error from α Ophiuchi, Dec. 22, by δ Ursæ Minoris, δ Ursæ Minoris SP., and δ Ursæ Minoris, Dec. 23 and 24.

THE following Results are deduced immediately from the Observed Transits:

I. SIDEREAL TIME *occupied by the Passage of the* SUN'S DIAMETER *across the Meridian.*

1836.	m. s.	1836.	m. s.	1836.	m. s.	1836.	m. s.
April 2	2 . 9,13	June 2	2 . 16,97	Aug. 8	2 . 12,29	Oct. 14	2 . 10,39
4	2 . 9,13	8	2 . 17,68	9	2 . 11,82	17	2 . 11,02
5	2 . 9,13	9	2 . 17,71	10	2 . 11,68	19	2 . 11,32
8	2 . 9,55	11	2 . 18,03	11	2 . 11,94	20	2 . 11,40
15	2 . 10,07	15	2 . 18,01	12	2 . 11,85	21	2 . 11,33
16	2 . 10,09	16	2 . 17,76	13	2 . 11,39	22	2 . 11,85
21	2 . 10,79	17	2 . 18,31	18	2 . 10,54	28	2 . 12,83
22	2 . 10,87	18	2 . 18,11	22	2 . 9,94	31	2 . 13,87
30	2 . 12,04	23	2 . 18,09	24	2 . 9,79		
		24	2 . 18,10	27	2 . 9,37	Nov. 5	2 . 15,17
		25	2 . 18,06	29	2 . 9,14	7	2 . 15,46
May 2	2 . 12,36	28	2 . 17,83	31	2 . 9,18	8	2 . 15,71
3	2 . 12,48	30	2 . 17,78			9	2 . 15,86
6	2 . 13,09					10	2 . 16,18
7	2 . 13,37			Sept. 1	2 . 9,03	14	2 . 17,23
9	2 . 13,45	July 1	2 . 17,66	3	2 . 8,88	15	2 . 17,40
10	2 . 13,73	2	2 . 17,54	5	2 . 8,61	17	2 . 17,92
11	2 . 13,77	4	2 . 17,55	7	2 . 8,63	18	2 . 17,93
12	2 . 14,24	5	2 . 17,29	13	2 . 8,27	21	2 . 18,68
13	2 . 14,52	7	2 . 17,22	16	2 . 8,17	24	2 . 19,44
14	2 . 14,59	8	2 . 16,97	19	2 . 8,29	25	2 . 19,62
16	2 . 14,73	9	2 . 16,85	20	2 . 8,27		
17	2 . 14,98	11	2 . 16,81	21	2 . 8,29	Dec. 3	2 . 21,08
18	2 . 15,14	13	2 . 16,58	24	2 . 8,39	8	2 . 21,73
19	2 . 15,35	21	2 . 14,86	28	2 . 8,68	10	2 . 22,06
20	2 . 15,48	28	2 . 13,90			13	2 . 22,14
21	2 . 15,62	29	2 . 13,61	Oct. 4	2 . 9,23	15	2 . 22,45
26	2 . 16,26			5	2 . 9,25	16	2 . 22,67
27	2 . 16,36			10	2 . 9,56	17	2 . 22,53
28	2 . 16,48	Aug. 3	2 . 12,71	11	2 . 10,10	20	2 . 22,85
30	2 . 16,98	4	2 . 12,76	12	2 . 10,25	23	2 . 22,65
31	2 . 17,08	6	2 . 12,39	13	2 . 10,38	24	2 . 22,65

II. SIDEREAL TIME *occupied by the Passage of the* MOON'S DIAMETER *across the Meridian.*

1836.	m. s.
June 28	2 . 38,32
July 27	2 . 33,18
September 24	2 . 11,58

The times are corrected for the defect of illumination, agreeably to the method described in the Introduction.

III. SIDEREAL TIME *occupied by the Passage of* JUPITER'S DIAMETER *across the Meridian.*

1836.	s.	1836.	s.	1836.	s.
March 24	2,78	May 14	2,41	Sept. 23	2,46
25	2,98	17	2,51	27	2,68
29	2,87	18	2,76		
30	2,60	19	2,92	Oct. 3	2,42
31	2,65	20	2,57	4	2,60
		21	2,27	11	2,46
April 11	2,98	26	2,48	13	2,46
22	2,65	28	2,47	19	2,56
23	2,80	30	2,88	30	2,68
25	2,09				
29	2,78	Aug. 30	2,02		
				Nov. 2	2,71
May 10	2,70			3	2,76
11	2,23	Sept. 2	2,63	6	2,73
12	2,50	19	2,51	7	2,75

IV. SIDEREAL TIME *occupied by the Passage of* SATURN'S RING *across the Meridian.*

1836.	s.	1836.	s.	1836.	s.
March 26	3,52	May 2	2,83	May 27	2,88
30	3,45	6	3,31	30	3,10
31	3,01	9	2,63	31	2,87
		10	2,98		
April 2	3,20	11	2,85	June 4	2,73
4	3,11	12	3,21	11	3,02
7	3,11	13	3,10	13	3,20
11	3,12	14	2,95	14	2,85
13	3,20	16	3,03	15	2,88
15	3,07	17	3,18	16	2,91
22	2,65	18	3,22	18	2,77
27	3,20	19	3,10	20	2,88
29	3,05	21	2,95	24	3,68
30	3,36	26	2,98	25	2,83

APPARENT RIGHT ASCENSIONS

OF

POLARIS AND δ URSÆ MINORIS,

AND

MEAN RIGHT ASCENSIONS OF THE STARS

OBSERVED IN THE YEAR 1836,

AS DEDUCED FROM EACH DAY'S OBSERVATION;

WITH

A CATALOGUE

OF THE

CONCLUDED MEAN RIGHT ASCENSIONS,

JANUARY 1, 1836.

POLARIS.

Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1836.	Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1836.
1836.	h. m. s.	h. m. s.	1836.	h. m. s.	h. m. s.
March 24	1 . 0 . 5,03	1 . 1 . 4,89	June 4	1 . 0 . 29,96	1 . 1 . 5,40
26	4,10	4,30	11	36,80	7,12
27	4,11	4,39	13	36,69	5,34
30	2,93	3,82	14	38,79	6,64
31	3,62	4,56	14	39,68	7,13
31	4,54	5,53	15	40,42	7,49
			20	41,74	5,34
April 2	4,43	5,45	24	45,80	5,84
2	4,29	5,28	25	46,34	5,94
4	2,83	3,69	25	46,67	5,81
4	2,94	3,73	28	50,51	7,49
7	4,86	5,31	28	50,87	7,45
11	4,89	5,27			
13	7,20	7,41	July 1	50,36	5,16
15	6,34	6,17	2	51,37	5,49
15	6,51	6,23	4	52,56	5,24
21	6,98	4,92	6	55,83	6,91
22	6,88	4,69	9	56,95	5,42
26	8,36	5,25	11	58,55	5,33
27	8,94	5,57	18	1 . 1 . 3,59	5,36
28	8,64	4,76			
29	8,76	4,67	Aug. 9	20,45	6,14
30	9,83	5,29	11	21,08	5,58
			12	22,98	6,93
May 2	11,64	6,10	13	22,95	6,37
3	12,38	6,11			
4	12,37	5,85	Sept. 22	38,10	3,41
6	13,37	6,02	23	38,78	3,87
6	13,61	6,09	24	38,73	3,74
9	15,26	6,78	24	38,71	3,62
9	15,30	6,61	26	40,49	4,93
10	15,23	6,30	28	40,46	4,49
11	14,52	5,10	28	38,69	2,57
11	15,18	5,50	30	42,94	6,33
12	15,78	5,83			
12	16,39	6,15	Oct. 3	43,16	6,10
13	16,65	6,12	4	42,89	5,81
13	16,17	5,32	4	42,44	5,34
14	17,66	6,50	5	41,60	4,49
14	17,54	6,05	5	39,99	2,88
15	16,62	4,83	9	42,58	5,42
15	17,04	4,92	10	42,43	5,18
16	18,98	6,21	11	42,47	5,16
17	19,35	6,26	11	42,59	5,23
17	19,95	6,55	12	43,20	5,73
18	20,27	6,57	13	43,47	5,93
19	20,15	5,87	13	43,91	6,34
19	20,31	5,74	16	42,31	4,76
20	19,35	4,50	18	44,51	7,25
21	20,73	5,36	19	42,96	5,78
26	23,69	5,46	19	41,38	4,30
27	24,34	5,40	21	41,15	4,32
30	26,53	5,30	21	42,80	6,04
31	27,17	5,19	22	44,50	7,79

POLARIS *continued.*

Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1836.	Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1836.
1836.	*h. m. s.*	*h. m. s.*	1836.	*h. m. s.*	*h. m. s.*
Oct. 25	1 . 1 . 42,62	1 . 1 . 6,11	Nov. 17	1 . 1 . 37,49	1 . 1 . 8,04
26	42,07	5,69	18	36,96	7,96
27	42,68	6,35	19	36,02	7,22
27	43,88	7,60	23	34,09	6,86
28	45,45	9,23	23	33,97	6,96
30	42,72	7,00	24	33,69	6,89
31	42,37	6,79	29	30,25	6,23
			29	29,89	6,19
Nov. 2	43,86	8,91	30	28,97	5,58
2	42,39	7,62	30	27,66	4,60
3	40,99	6,39			
5	40,12	6,16			
5	40,03	6,22	Dec. 1	(35,82)	(13,09)
6	38,54	5,00	5	26,81	6,42
7	39,24	5,82	5	26,52	6,39
7	39,90	6,60	7	25,41	6,07
8	40,06	6,86	8	26,12	7,33
9	38,63	5,77	9	24,24	6,05
10	38,51	5,76	9	24,36	6,50
11	39,81	7,36	10	24,50	6,98
12	40,41	8,30	13	19,93	4,69
13	39,81	8,36	13	19,50	4,65
14	38,07	6,87	15	17,13	3,39
14	37,63	6,68	15	18,28	4,90
16	37,01	7,08	16	19,60	6,57

δ URSÆ MINORIS.

Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1836.	Day of Observation.	Apparent R.A.	Mean R.A. Jan. 1, 1836.
1836.	*h. m. s.*	*h. m. s.*	1836.	*h. m. s.*	*h. m. s.*
July 21	18 . 25 . 26,47	18 . 25 . 12,56	Aug. 26	18 . 25 . 14,84	18 . 25 . 12,15
22	25,73	12,03	27	14,51	11,99
			28	14,18	12,18
Aug. 2	23,21	12,31	30	13,30	12,01
6	21,95	12,20	31	14,60	13,49
9	20,62	12,03	31	14,52	13,61
10	20,36	11,94			
11	20,16	12,08	Sept. 1	12,92	12,21
12	19,74	11,98	2	12,50	12,19
13	(16,72)	(9,28)	5	11,25	12,23
15	18,97	12,12	5	10,98	12,17
17	18,32	12,10	6	10,76	12,17
19	17,87	12,32			
21	16,81	12,02	Oct. 27	24 . 49,17	11,95
24	15,88	12,27			
24	15,45	12,03	Dec. 23	33,38	11,75
25	15,09	11,86	23	33,06	11,49
26	15,35	12,48	24	32,81	11,31

ι Piscium.	h. m. s.
Oct. 21	0 . 17 . 0,04
22	0,07
Nov. 24	16 . 59,97
Dec. 5	17 . 0,18
8	0,04

δ Piscium.	
Sept. 24	0 . 40 . 10,09
30	10,68

π Ceti.	
Dec. 16	0 . 44 . 33,04

ε Piscium.	
Oct. 22	0 . 59 . 55,64
23	55,62

μ Piscium.	
Dec. 16	1 . 21 . 36,10
17	36,33

ν Piscium.	
Dec. 16	1 . 32 . 54,24

ο Piscium.	
Nov. 19	1 . 36 . 44,74
20	44,54

α ARIETIS.	
Oct. 21	1 . 57 . 56,85
22	56,80
25	56,75
Nov. 2	56,86
10	56,72
12	56,77
14	56,69
20	56,87
23	56,74
29	56,82
30	56,79
Dec. 5	56,83
7	56,77
8	56,85
9	56,80

α ARIETIS *continued.*	h. m. s.
Dec. 13	1 . 57 . 56,82
14	56,77
16	56,87
19	56,75
20	56,72
21	56,68

39 Arietis.	
Nov. 20	2 . 36 . 2,15
23	2,02

π Arietis.	
Nov. 20	2 . 40 . 9,27
23	9,28

ε Arietis.	
Dec. 20	2 . 49 . 50,09

α CETI.	
Oct. 22	2 . 53 . 42,92
Nov. 10	43,01
19	42,98
20	42,90
23	43,00
24	43,06
29	42,95
30	42,89
Dec. 5	42,93
7	42,95
8	43,01
9	42,84
14	42,98
16	42,92
18	43,00
19	42,93
20	42,94

δ Arietis.	
Dec. 20	3 . 2 . 15,87

α Persei.	
May 19	3 . 12 . 39,08

A¹ Tauri.	
Nov. 23	3 . 55 . 0,72
24	0,77

a² Tauri.	h. m. s.
Nov. 23	4 . 7 . 39,70
24	39,54

ALDEBARAN.	
March 24	4 . 26 . 31,06
25	31,08
29	30,96
April 9	31,07
16	31,11
25	31,30
June 14	31,11
29	31,18
July 1	30,99
3	31,11
5	31,02
7	31,23
8	31,17
12	31,13
15	30,95
Aug. 5	31,25
Oct. 27	31,06
Nov. 23	31,26
24	31,12
Dec. 18	31,16
20	31,23
24	31,12

τ Tauri.	
Oct. 27	4 . 32 . 24,86
Dec. 20	24,77

RIGEL.	
March 25	5 . 6 . 39,55
31	39,54
April 11	39,57
May 7	39,69
12	39,72
13	39,70
14	39,76
18	39,74
26	39,79
27	39,90
30	39,88
June 19	39,65
27	39,60
28	39,76
July 3	39,67
8	39,68
10	39,62
17	39,79

RIGEL *continued.*	h. m. s.
Aug. 5	5 . 6 . 39,51
7	39,73
8	39,66
Dec. 20	39,48
22	39,72
23	39,38

ι Tauri.	
Nov. 23	5 . 9 . 25,74
24	25,67

β TAURI.	
March 29	5 . 15 . 55,85
April 11	56,13
22	55,89
May 6	[illegible]
12	[illegible]
13	56,07
14	55,94
19	55,96
July 17	[illegible]
22	[illegible]
25	[illegible]
27	55,82
Aug. 1	55,72
5	56,06
7	55,90
Nov. 23	55,94
24	[illegible]
Dec. 22	55,89
23	56,07
24	55,84

ζ Tauri.	
March 24	5 . 27 . 50,86
25	50,84

α ORIONIS.	
April 27	5 . 46 . 17,76
May 7	17,85
9	17,89
12	17,77
13	17,77
16	17,90
18	17,90
20	17,82
26	17,85

α ORIONIS *continued.*

	h.	m.	s.
June 8	5	46	17,74
29			17,76
July 1			17,78
3			17,77
7			17,91
8			17,79
10			17,82
15			17,91
17			17,82
22			17,86
27			17,81
Aug. 1			17,75
7			17,86
9			17,81
17			17,81
24			17,73
28			17,80
Dec. 23			17,86
24			18,03

η Geminorum.

	h.	m.	s.
March 24	6	4	58,70
25			58,74

μ Geminorum.

	h.	m.	s.
March 24	6	13	2,35
29			2,40

CASTOR.

	h.	m.	s.
July 25	7	24	7,69
Dec. 23			7,70
24			7,71

PROCYON.

	h.	m.	s.
March 24	7	30	42,87
25			43,10
29			42,90
30			42,80
31			42,94
April 4			42,78
8			42,84
11			42,76
22			42,75
27			42,97
29			42,74
30			42,75
May 2			42,79
6			42,78
10			42,79
11			42,82
12			42,72

PROCYON *continued.*

	h.	m.	s.
May 13	7	30	42,84
14			42,80
16			42,90
18			42,79
19			42,78
20			42,88
22			42,73
27			42,88
28			42,85
30			42,81
31			43,00
June 8			42,75
14			42,79
15			42,90
18			42,81
July 1			43,09
2			42,96
5			42,91
Aug. 7			42,84
8			42,92
12			42,77
16			42,91
26			42,82
28			42,94
30			42,88
31			42,91
Sept. 6			42,91
27			42,83
Oct. 3			42,72
Dec. 23			42,89
24			42,80

κ Geminorum.

	h.	m.	s.
April 22	7	34	32,43

POLLUX.

	h.	m.	s.
March 24	7	35	16,41
25			16,34
29			16,42
30			16,21
31			16,30
April 4			16,24
8			16,34
11			16,33
21			16,36
29			16,25
30			16,20
May 2			16,32
6			16,30
10			16,28
11			16,26
12			16,31
13			16,41
14			16,33

POLLUX *continued.*

	h.	m.	s.
May 16	7	35	16,44
18			16,33
19			16,42
20			16,36
22			16,35
25			16,42
26			16,39
30			16,40
31			16,33
June 15			16,35
18			16,35
20			16,45
Aug. 16			16,39
26			16,36
28			16,35
30			16,33
31			16,30
Sept. 6			16,34
12			16,23
27			16,24
Oct. 3			16,34
4			16,40
Dec. 23			16,33
24			16,28

η Cancri.

	h.	m.	s.
Dec. 24	8	23	13,02

γ Cancri.

	h.	m.	s.
Oct. 3	8	33	47,25
4			47,23
Dec. 24			47,16

α HYDRÆ.

	h.	m.	s.
March 24	9	19	31,80
25			31,82
29			31,86
30			31,79
31			31,82
April 4			31,82
9			31,64
11			31,86
15			31,77
May 6			31,81
10			31,69
13			31,87
14			31,74
16			31,78
22			31,88
June 20			31,81

α HYDRÆ *continued.*

	h.	m.	s
Sept. 23	9	19	31,63
Oct. 4			32,05
11			31,80
13			31,80
19			31,71
30			31,77
Nov. 2			31,85
3			31,94

REGULUS.

	h.	m.	s.
March 24	9	59	37,99
25			37,98
29			38,16
30			38,06
31			37,97
April 4			37,99
8			38,09
9			38,05
11			38,12
15			37,97
22			38,12
27			37,90
29			38,03
May 5			38,11
6			37,88
9			37,62
10			37,94
11			37,92
12			37,97
13			37,78
14			37,96
16			37,90
18			37,85
19			37,97
21			37,88
22			37,99
24			37,80
25			37,92
26			37,89
28			38,00
31			37,78
June 3			37,96
14			37,88
15			37,99
18			37,93
20			38,00
25			38,03
28			38,00
30			37,90
July 1			38,04
2			38,06
4			38,04
5			37,95
9			38,17
12			38,01
16			38,01
Sept. 2			37,98

Regulus *continued.*	
	h. m. s.
Sept. 20	9 . 59 . 37,91
23	37,90
27	37,98
Oct. 3	37,87
4	37,88
11	38,04
13	37,97
19	37,78
30	38,01
Nov. 3	37,79
6	38,04
7	38,00

γ Leonis.	
March 29	10 . 10 . 55,44
30	55,31
April 25	55,38
27	55,38
May 22	55,23
26	55,23

ρ Leonis.	
April 25	10 . 24 . 10,33
27	10,28

k Leonis.	
March 29	10 . 37 . 43,75
April 4	43,81

χ Leonis.	
March 29	10 . 56 . 33,26
30	33,26

n Leonis.	
Nov. 30	11 . 7 . 16,73

σ Leonis.	
April 27	11 . 12 . 40,76
29	40,76

ι Leonis.	
Nov. 30	11 . 15 . 22,26

τ Leonis.	
	h. m. s.
April 27	11 . 19 . 30,18
29	30,22

ν Virginis.	
March 30	11 . 37 . 25,82
31	25,87

β Leonis.	
March 24	11 . 40 . 41,62
26	41,33
30	41,61
31	41,45
April 4	41,65
9	41,51
11	41,46
22	41,43
27	41,57
29	41,44
30	41,65
May 6	41,47
9	41,61
10	41,56
11	41,61
12	41,49
13	41,53
14	41,66
18	41,41
30	41,34
31	41,40
June 4	41,38
13	41,45
15	41,41
18	41,44
20	41,38
25	41,49
28	41,49
July 1	41,52
2	41,49
9	41,58
11	41,41
16	41,70
Aug. 9	41,41
Oct. 3	41,43
11	41,39
12	41,46
13	41,40
19	41,56
30	41,62
Nov. 30	41,47

ο Virginis.	
April 27	11 . 56 . 51,31
29	51,24

η Virginis.	
	h. m. s.
April 27	12 . 11 . 31,22
29	31,17

c Virginis.	
March 31	12 . 12 . 1,41
April 4	1,42
May 26	1,32
June 4	1,56

γ^1 Virginis.	
March 31	12 . 33 . 21,47
April 4	21,50
May 26	21,51
30	21,26
Dec. 2	21,30

δ Virginis.	
April 29	12 . 47 . 20,83
30	20,82
Dec. 2	20,69

θ Virginis.	
April 29	13 . 1 . 27,90
30	28,15

Spica.	
March 26	13 . 16 . 34,01
31	33,91
April 2	34,00
29	33,98
30	33,87
May 2	33,97
6	33,90
10	33,78
11	33,91
12	33,97
19	33,91
21	33,92
26	33,79
27	33,92
30	33,88
31	33,94
June 1	33,91
4	33,89

Spica *continued.*	
	h. m. s.
June 11	13 . 16 . 33,77
13	33,82
14	33,76
15	33,82
18	33,85
20	33,82
28	33,84
July 1	33,78
2	33,86
4	33,76
6	33,81
9	33,84
18	33,80
Aug. 9	33,79
12	33,85
13	33,81
31	33,80
Sept. 1	33,78
Dec. 2	33,76

m Virginis.	
April 2	13 . 33 . 0,75
4	1,00

κ Virginis.	
April 29	14 . 4 . 9,59
30	9,42
May 27	9,60
30	9,50

Arcturus.	
April 15	14 . 8 . 11,25
22	11,24
26	11,05
27	11,17
29	11,24
30	11,24
May 2	11,21
6	11,26
9	11,34
10	11,31
11	11,22
12	11,28
14	11,13
16	11,07
17	11,07
18	11,20
19	11,35
20	11,22
21	11,16
26	11,19
27	11,16
30	11,17
31	11,15

ARCTURUS *continued.*	h. m. s.
June 4	14 . 8 . 11,26
8	11,17
11	11,13
13	11,24
14	11,28
15	11,13
16	11,15
18	11,23
20	11,22
24	11,22
25	11,24
28	11,09
July 1	10,96
2	11,07
6	11,10
7	11,10
8	11,11
9	11,09
11	11,15
16	11,12
18	11,09
20	11,17
23	11,15
26	11,18
30	11,13
Aug. 2	11,29
9	11,14
11	11,22
12	11,05
13	11,08
15	11,10
16	11,11
18	11,12
26	11,19
31	11,10
Sept. 5	11,10
16	11,23
24	11,13
28	11,16
Oct. 5	11,03
10	11,09
13	11,10
14	11,24
17	11,13
19	10,98
20	11,20
30	11,03
Nov. 6	11,06
7	11,10
13	11,14
14	11,15
15	11,15
17	11,08
20	11,17
23	11,12
27	11,15
Dec. 5	11,15
6	11,04
9	11,05
12	11,11
13	11,26

ARCTURUS *continued.*	h. m. s.
Dec. 15	14 . 8 . 11,08
16	11,12

ϵ BOOTIS.	
April 2	14 . 37 . 49,54
3	49,65
7	49,68
13	49,70
May 4	49,69
17	49,60
19	49,60
June 8	49,67
11	49,80
13	49,67
14	49,64
15	49,74
16	49,64
20	49,62
24	49,57
25	49,70
July 4	49,61
8	49,58
16	49,55
18	49,57
26	49,69
Aug. 2	49,62

α^2 LIBRÆ.	
April 3	14 . 41 . 49,17
7	49,11
13	49,08
May 2	49,07
4	49,22
17	49,26
June 8	49,19
11	49,33
13	49,15
14	49,28
15	49,25
24	49,46
25	49,22
July 4	49,21
16	49,30

β Ursæ Minoris.	
May 19	14 . 51 . 16,83
July 30	17,21
Dec. 13	15,75

ι^1 Libræ.	h. m. s.
June 24	15 . 2 . 53,36
25	53,40

β Libræ.	
July 20	15 . 8 . 11,59
26	11,55
30	11,52

5 Serpentis.	
May 6	15 . 10 . 56,86
30	56,98
June 8	56,85

α CORONÆ BOREALIS.	
May 1	15 . 27 . 45,05
6	44,82
19	44,84
30	44,85
June 11	44,97
13	44,91
14	44,95
16	44,79
24	44,86
25	44,91
July 20	44,82
30	44,91
Aug. 2	45,01
9	45,10
10	44,86
Nov. 14	44,98

η Libræ.	
June 25	15 . 34 . 51,67

α SERPENTIS.	
May 6	15 . 36 . 11,66
19	11,77
30	11,82
31	11,84
June 11	11,82
13	11,93
14	11,81
16	11,91
24	11,96
July 20	11,85
27	11,86
30	11,80

α SERPENTIS *continued.*	h. m. s.
Aug. 2	15 . 36 . 11,97
9	11,87
10	11,82

θ Libræ.	
May 2	15 . 44 . 30,05
June 11	30,00
25	29,94
28	30,22

ζ Ursæ Minoris.	
July 20	15 . 50 . 4,36
27	4,34
30	4,79
Aug. 2	4,56

δ Scorpii.	
May 2	15 . 50 . 39,01
June 11	38,85

θ Draconis.	
May 19	15 . 58 . 49,54

δ OPHIUCHI.	
May 2	16 . 5 . 45,48
6	45,32
19	45,44
June 25	45,38
28	45,43
29	45,46
July 20	45,49
23	45,51
27	45,41
50	45,41
Aug. 2	45,36

ANTARES.	
May 6	16 . 19 . 21,73
June 25	22,08
28	22,17
July 1	21,94
4	22,05
6	22,19

ANTARES *continued.*

	h.	m.	s.
July 7	16	19	21,99
8			22,38
9			21,97
11			21,98
18			22,04
20			22,03
24			22,17
Aug. 2			21,97
20			21,84
24			21,83

∗ N.P.D. 89°. 30′.

May 19	17	4	31,89

α HERCULIS.

May 31	17	7	10,50
June 11			10,37
28			10,54
29			10,46
July 1			10,48
2			10,62
4			10,57
6			10,51
7			10,51
8			10,47
9			10,46
11			10,63
18			10,43
Aug. 2			10,58
6			10,52
10			10,45
11			10,35
12			10,39
13			10,39
17			10,34
21			10,46
24			10,49
26			10,35
Sept. 3			10,48
5			10,41
23			10,57
Oct. 13			10,45
17			10,46
27			10,52
Nov. 17			10,66
24			10,50
Dec. 14			10,37

α OPHIUCHI.

June 11	17	27	19,38
26			19,75

α OPHIUCHI *continued.*

	h.	m.	s.
June 28	17	27	19,68
29			19,51
July 7			19,57
18			19,73
22			19,58
23			19,75
Aug. 2			19,70
6			19,69
10			19,63
11			19,58
12			19,65
13			19,65
17			19,63
18			19,64
26			19,68
Sept. 3			19,63
23			19,52
Oct. 11			19,45
13			19,54
15			19,56
17			19,64
20			19,58
27			19,59
28			19,56
31			19,52
Nov. 7			19,57
8			19,70
14			19,62
17			19,58
24			19,47
Dec. 14			19,60
15			19,57
16			19,61
19			19,63
22			19,56

μ^1 Sagittarii.

June 28	18	3	57,74
29			57,49
Aug. 21			57,48

δ Sagittarii.

June 28	18	10	29,99
29			29,83

β Lyræ.

July 23	18	44	1,76
Aug. 6			1,84

τ Sagittarii.

	h.	m.	s.
June 28	18	56	41,97
29			42,07

ζ Aquilæ.

July 21	18	57	52,48
23			52,62
Sept. 23			52,42
26			52,62
28			52,62

δ Aquilæ.

July 21	19	17	13,90
Sept. 26			13,97
28			13,99

h^2 Sagittarii.

June 28	19	26	43,31
29			43,26

γ Aquilæ.

July 20	19	38	28,02
Sept. 23			27,82
26			28,05
30			27,97

α AQUILÆ.

June 29	19	42	47,13
July 21			46,97
23			47,10
27			46,91
30			47,01
Aug. 1			47,07
6			46,95
9			46,93
10			47,14
11			47,10
12			47,05
13			47,20
15			47,02
17			47,09
19			47,10
21			47,01
24			47,08
25			47,11
27			47,00
30			47,08
31			47,08

α AQUILÆ *continued.*

	h.	m.	s.
Sept. 1	19	42	47,05
2			47,12
5			47,09
6			47,05
8			47,19
9			47,08
10			46,94
12			47,04
13			47,10
14			46,99
16			46,99
23			47,09
26			47,04
30			47,06
Oct. 3			46,99
4			47,21
11			47,22
13			47,17
15			46,97
19			47,03
20			47,11
27			46,98
28			47,08
31			46,94
Nov. 5			47,08
7			47,05
8			46,83
14			46,96
17			46,92
29			46,93
Dec. 3			47,11
8			47,00
10			46,97
13			46,94
15			46,99
20			46,78
23			46,82
24			46,85

59 Sagittarii.

July 27	19	46	52,56

β Aquilæ.

July 20	19	47	15,63
21			15,64
Sept. 13			15,53
14			15,52
23			15,63
30			15,53
Oct. 3			15,69
4			15,63
5			15,69
11			15,45
13			15,43
15			15,43
19			15,61
20			15,51

β Aquilæ *continued.*

	h.	m.	s.
Oct. 27	19	47	15,49
28			15,47
31			15,58
Nov. 5			15,37
7			15,56
8			15,47
14			15,40
17			15,44

c Sagittarii.

	h.	m.	s.
July 27	19	52	33,83
30			33,88

α^2 CAPRICORNI.

	h.	m.	s.
July 21	20	8	57,13
27			57,20
30			57,31
Aug. 1			57,29
3			57,10
6			56,97
9			57,21
12			57,13
13			57,03
15			57,04
19			57,02
21			57,12
24			57,07
25			57,06
27			57,30
30			57,09
31			57,06
Sept. 1			57,10
2			57,02
5			57,10
6			57,09
8			57,00
9			57,11
10			57,06
12			57,07
13			57,04
16			57,04
23			57,02
24			57,19
30			57,06
Oct. 3			57,08
4			56,96
5			57,15
10			57,17
11			57,17
13			57,12
15			57,11
19			57,19
20			57,09
27			57,08

α^2 CAPRICORNI *continued.*

	h.	m.	s.
Oct. 28	20	8	57,10
31			57,02
Nov. 5			57,07
7			57,06
8			57,08
14			57,09
17			57,11
29			57,12

σ Capricorni.

	h.	m.	s.
June 29	20	9	55,56
Aug. 10			55,50

ψ Capricorni.

	h.	m.	s.
July 27	20	36	22,50
30			22,43
Aug. 24			22,51
25			22,48
Nov. 4			22,39

η Capricorni.

	h.	m.	s.
July 27	20	55	3,68
30			3,74

⁎ N.P.D. 60°. 28′.

	h.	m.	s.
Oct. 21	21	1	41,75

ζ Cygni.

	h.	m.	s.
Oct. 21	21	5	57,66
31			57,66

⁎ N.P.D. 76°. 45′.

	h.	m.	s.
Aug. 3	21	9	2,37

ζ Capricorni.

	h.	m.	s.
Aug. 24	21	17	17,71
25			17,68
Nov. 14			17,62

β AQUARII.

	h.	m.	s.
July 30	21	22	55,40
Aug. 1			55,31
3			55,35
5			55,44
6			55,44
8			55,50
9			55,47
10			55,38
12			55,44
13			55,51
15			55,42
24			55,46
25			55,44
27			55,46
31			55,49
Sept. 1			55,44
2			55,36
3			55,32
5			55,42
6			55,40
8			55,37
9			55,39
10			55,48
13			55,37
14			55,44
16			55,39
23			55,39
24			55,50
30			55,38
Oct. 1			55,40
3			55,42
4			55,67
5			55,38
10			55,40
11			55,51
13			55,44
15			55,48
18			55,40
19			55,48
20			55,47
21			55,41
27			55,44
28			55,36
31			55,60
Nov. 2			55,56
3			55,45
5			55,39
7			55,56
8			55,37
14			55,49
17			55,47
Dec. 1			55,48
6			55,52
8			55,38
14			55,22
20			55,30

ε Capricorni.

	h.	m.	s.
Nov. 14	21	27	53,42

γ Capricorni.

	h.	m.	s.
Aug. 24	21	31	0,03
25		30	59,89
Oct. 18			59,79
19			59,92

ε Pegasi.

	h.	m.	s.
Aug. 5	21	36	8,08
Sept. 14			8,01
23			8,04
24			8,00
30			8,02
Oct. 21			8,11
27			8,03
28			7,84
31			7,94

δ Capricorni.

	h.	m.	s.
Oct. 18	21	37	58,98
19			58,76

μ Capricorni.

	h.	m.	s.
Dec. 13	21	44	21,01
14			20,97

α AQUARII.

	h.	m.	s.
July 27	21	57	21,80
29			21,50
30			21,67
Aug. 1			21,51
3			21,73
5			21,60
6			21,65
8			21,61
9			21,51
12			21,66
13			21,68
15			21,72
17			21,70
19			21,67
Sept. 7			21,98
8			21,66
9			21,55
Oct. 1			21,67
18			21,68
21			21,65
25			21,59
29			21,69
Nov. 2			21,56
3			21,81
5			21,67

α AQUARII *continued.*

		h.	m.	s.
Nov.	7	21	57	21,72
	8			21,77
	14			21,73
	17			21,66
	18			21,76
	23			21,70
	24			21,71
Dec.	1			21,60
	6			21,49
	8			21,66

ι Aquarii.

		h.	m.	s.
Dec.	13	21	57	34,49

δ Aquarii.

		h.	m.	s.
Sept.	23	22	45	56,69
	30			56,50
Dec.	13			56,66

α PEGASI.

		h.	m.	s.
Sept.	9	22	56	35,98
	10			35,91
	13			36,01
	20			35,85
	21			35,94
	23			35,87
	24			35,88
	28			36,00

α PEGASI *continued.*

		h.	m.	s.
Oct.	1	22	56	35,89
	3			35,97
	4			35,89
	5			35,87
	11			35,92
	13			35,87
	15			35,86
	27			36,01
	28			35,90
	29			35,89
	31			35,94
Nov.	2			35,94
	3			35,85
	5			35,88
	7			35,90
	8			35,97
	12			35,85
	14			35,84
	20			35,86
	23			35,92
	24			35,99
Dec.	1			35,95
	6			35,99
	8			35,94
	9			36,03
	10			36,01
	13			35,88
	15			36,01
	16			35,98
	21			35,90

φ Aquarii.

		h.	m.	s.
Aug.	27	23	5	49,73
	31			49,83

φ Aquarii *continued.*

		h.	m.	s.
Sept.	23	23	5	49,70
	24			49,77

ψ^3 Aquarii.

		h.	m.	s.
Aug.	27	23	10	25,77
	31			25,73
Oct.	21			25,73
	28			25,64
	31			25,65
Dec.	13			25,78
	15			25,79

n Piscium.

		h.	m.	s.
Oct.	21	23	39	30,91
	22			30,82
	24			30,81
Dec.	5			30,79
	8			30,77

p Piscium.

		h.	m.	s.
Sept.	23	23	50	16,76
	30			16,79
Dec.	15			16,91

s Piscium.

		h.	m.	s.
Sept.	23	23	56	56,54
	28			56,73

α ANDROMEDÆ.

		h.	m.	s.
Sept.	20	23	59	55,70
	26			55,63
Oct.	3			55,60
	4			55,65
	5			55,62
	11			55,37
	19			55,63
	20			55,71
	21			55,58
	22			55,64
	25			55,73
	27			55,67
	28			55,62
Nov.	2			55,47
	3			55,50
	5			55,60
	7			55,55
	8			55,67
	10			55,60
	11			55,67
	12			55,62
	14			55,55
	20			55,63
	23			55,54
	24			55,66
	29			55,61
Dec.	5			55,59
	7			55,74
	8			55,51
	9			55,54
	10			55,67
	13			55,67
	15			55,62
	16			55,53
	23			55,69

CATALOGUE OF THE CONCLUDED MEAN RIGHT ASCENSIONS, JAN. 1, 1836; WITH THE ANNUAL VARIATIONS.

Name of Star.	Number of Observations.	Mean R.A. Jan. 1, 1836.	Annual Variation.	Name of Star.	Number of Observations.	Mean R.A. Jan. 1, 1836.	Annual Variation.
		h. m. s.	s.			h. m. s.	s.
ι Piscium	5	0 . 17 . 0,06	+ 3,070	α^2 LIBRÆ	15	14 . 41 . 49,22	+ 3,305
δ Piscium	2	0 . 40 . 10,96	+ 3,095	β Ursæ Minoris	3	14 . 51 . 16,60	− 0,286
m Ceti	1	0 . 44 . 38,04	+ 3,059	ι Libræ	2	15 . 2 . 53,38	+ 3,400
e Piscium	2	0 . 59 . 55,63	+ 3,097	β Libræ	3	15 . 8 . 11,55	+ 3,218
POLARIS	148	1 . 1 . 5,84	+ 16,073	5 Serpentis	3	15 . 10 . 56,90	+ 3,026
μ Piscium	2	1 . 21 . 36,22	+ 3,111	α CORONÆ BOREALIS	16	15 . 27 . 44,91	+ 2,526
ν Piscium	1	1 . 32 . 54,24	+ 3,111	η Libræ	1	15 . 34 . 51,67	+ 3,359
ο Piscium	2	1 . 36 . 44,64	+ 3,148	α SERPENTIS	15	15 . 36 . 11,85	+ 2,936
α ARIETIS	21	1 . 57 . 56,79	+ 3,342	θ Libræ	4	15 . 44 . 30,05	+ 3,390
38 Arietis	2	2 . 36 . 2,08	+ 3,242	ζ Ursæ Minoris	4	15 . 50 . 4,51	− 2,384
π Arietis	2	2 . 40 . 9,28	+ 3,326	δ Scorpii	2	15 . 50 . 38,93	+ 3,527
ε Arietis	1	2 . 49 . 50,99	+ 3,408	θ Draconis	1	15 . 58 . 49,54	+ 1,147
α CETI	17	2 . 53 . 42,95	+ 3,123	δ OPHIUCHI	11	16 . 5 . 45,43	+ 3,135
δ Arietis	1	3 . 2 . 15,87	+ 3,398	ANTARES	16	16 . 19 . 22,02	+ 3,659
α Persei	1	3 . 12 . 39,08	+ 4,221	✳ N.P.D. 89° . 30′	1	17 . 4 . 31,89	+ 3,057
A^1 Tauri	2	3 . 55 . 0,75	+ 3,520	α HERCULIS	32	17 . 7 . 10,48	+ 2,729
ω^2 Tauri	2	4 . 7 . 39,62	+ 3,500	α OPHIUCHI	37	17 . 27 . 19,60	+ 2,770
ALDEBARAN	22	4 . 26 . 31,12	+ 3,423	μ^1 Sagittarii	3	18 . 3 . 57,57	+ 3,583
τ Tauri	2	4 . 32 . 24,72	+ 3,584	δ Sagittarii	2	18 . 10 . 29,91	+ 3,835
RIGEL	24	5 . 6 . 39,71	+ 2,876	δ URSÆ MINORIS	31	18 . 25 . 12,17	− 19,211
n Tauri	2	5 . 9 . 25,71	+ 3,592	β Lyræ	2	18 . 44 . 1,80	+ 2,211
β TAURI	20	5 . 15 . 55,93	+ 3,779	τ Sagittarii	2	18 . 56 . 42,02	+ 3,755
ζ Tauri	2	5 . 27 . 50,85	+ 3,577	ζ Aquilæ	5	18 . 57 . 52,55	+ 2,754
α ORIONIS	28	5 . 46 . 17,83	+ 3,241	δ Aquilæ	3	19 . 17 . 13,95	+ 3,007
η Geminorum	2	6 . 4 . 58,72	+ 3,623	h^2 Sagittarii	2	19 . 26 . 43,28	+ 3,654
μ Geminorum	2	6 . 13 . 2,38	+ 3,623	γ Aquilæ	4	19 . 38 . 27,97	+ 2,849
CASTOR	3	7 . 24 . 7,70	+ 3,856	α AQUILÆ	59	19 . 42 . 47,03	+ 2,924
PROCYON	48	7 . 30 . 42,85	+ 3,143	59 Sagittarii	1	19 . 46 . 52,56	+ 3,693
κ Geminorum	1	7 . 34 . 32,43	+ 3,634	β Aquilæ	22	19 . 47 . 15,53	+ 2,943
POLLUX	42	7 . 35 . 16,33	+ 3,682	c Sagittarii	2	19 . 52 . 33,86	+ 3,700
η Cancri	1	8 . 23 . 13,02	+ 3,485	α^2 CAPRICORNI	48	20 . 8 . 57,10	+ 3,331
γ Cancri	3	8 . 33 . 47,21	+ 3,493	σ Capricorni	2	20 . 9 . 55,53	+ 3,471
α HYDRÆ	24	9 . 19 . 31,80	+ 2,948	ψ Capricorni	5	20 . 36 . 22,46	+ 3,572
REGULUS	59	9 . 59 . 37,96	+ 3,221	η Capricorni	2	20 . 55 . 3,71	+ 3,430
γ Leonis	6	10 . 10 . 55,33	+ 3,300	✳ N.P.D. 60° . 28′	1	21 . 1 . 41,75	+ 2,537
ρ Leonis	2	10 . 24 . 10,31	+ 3,166	ζ Cygni	2	21 . 5 . 57,66	+ 2,546
k Leonis	2	10 . 37 . 43,78	+ 3,195	✳ N.P.D. 76° . 45′	1	21 . 9 . 2,37	+ 2,855
χ Leonis	2	10 . 56 . 33,26	+ 3,086	ζ Capricorni	3	21 . 17 . 17,67	+ 3,441
n Leonis	1	11 . 7 . 16,73	+ 3,146	β AQUARII	56	21 . 22 . 55,43	+ 3,162
σ Leonis	2	11 . 12 . 40,76	+ 3,102	ε Capricorni	1	21 . 27 . 53,42	+ 3,372
ι Leonis	1	11 . 15 . 22,26	+ 3,121	γ Capricorni	4	21 . 30 . 59,91	+ 3,322
τ Leonis	2	11 . 19 . 30,20	+ 3,084	ε Pegasi	9	21 . 36 . 8,01	+ 2,942
ν Virginis	2	11 . 37 . 25,85	+ 3,086	δ Capricorni	2	21 . 37 . 58,87	+ 3,304
β LEONIS	41	11 . 40 . 41,49	+ 3,064	μ Capricorni	2	21 . 44 . 20,99	+ 3,259
ο Virginis	2	11 . 56 . 51,28	+ 3,071	α AQUARII	35	21 . 57 . 21,67	+ 3,082
η Virginis	2	12 . 11 . 31,20	+ 3,068	ι Aquarii	1	21 . 57 . 34,49	+ 3,247
c Virginis	4	12 . 12 . 1,43	+ 3,026	δ Aquarii	3	22 . 45 . 56,62	+ 3,196
γ^1 Virginis	5	12 . 33 . 21,41	+ 3,022	α PEGASI	38	22 . 56 . 35,92	+ 2,975
δ Virginis	3	12 . 47 . 20,78	+ 3,004	φ Aquarii	4	23 . 5 . 49,76	+ 3,106
θ Virginis	2	13 . 1 . 28,03	+ 3,097	ψ^3 Aquarii	7	23 . 10 . 25,73	+ 3,122
SPICA	37	13 . 16 . 33,86	+ 3,147	n Piscium	5	23 . 39 . 30,82	+ 3,076
m Virginis	2	13 . 33 . 0,88	+ 3,140	p Piscium	3	23 . 50 . 16,82	+ 3,073
κ Virginis	4	14 . 4 . 9,53	+ 3,183	s Piscium	2	23 . 56 . 56,64	+ 3,070
ARCTURUS	86	14 . 8 . 11,15	+ 2,731	α ANDROMEDÆ	35	23 . 59 . 55,61	+ 3,067
ε BOOTIS	22	14 . 37 . 49,64	+ 2,621				

The mean excess of the Right Ascensions of the Fundamental Stars above the Right Ascensions of the same stars in the Nautical Almanac is $0^s,086$.

ZENITH DISTANCES

OBSERVED WITH THE MURAL CIRCLE,

AND

CALCULATION

OF

GEOCENTRIC NORTH POLAR DISTANCES.

1836.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Mar. 24	⊙ S.L. M.	246. 5	1.53,9	52,0	53,9	51,1	51,5	50,9	15,891	- 2.1,65	246. 4.50,62	G.
	⊙ N.L.	245.30	2.48,1	48,8	47,0	44,2	45,6	45,5			245.32.46,60	G.
	Venus S.L.	230.30	0. 6,4	5,4	5,3	2,9	4,5	4,2			230.30. 4,78	G.
	(a) ☽ S.L.	221.30	1. 6,2	7,0	6,3	5,8	6,0	4,1		- 1,68	221.31. 4,25	G.
	☽ S.L. M.	221.30	1. 6,2	7,0	6,3	5,8	6,0	4,1	10,135	- 1,67 - 0,84	221.31. 3,42	G.
	☽ S.L. M.	221.30	1. 6,2	7,0	6,3	5,8	6,0	4,1	10,147	- 1,92	221.31. 4,01	G.
	☽ S.L. M.	221.30	1. 6,2	7,0	6,3	5,8	6,0	4,1	10,160	- 2,18 + 0,84	221.31. 4,59	G.
	☽ S.L. M.	221.30	1. 6,2	7,0	6,3	5,8	6,0	4,1	10,202	- 3,06 + 1,68	221.31. 4,55	G.
	μ Geminorum	224.45	1.54,2	52,6	52,5	52,3	53,2	51,8			224.46.52,82	G.
	Jupiter S.L.	223.50	2.37,9	37,2	36,2	36,3	35,7	35,0			223.52.36,45	G.
	α Hydræ R. M.	315. 0	1.22,0	21,1	20,2	18,1	18,3	18,8	8,750	+ 27,19	315. 1.46,97	G.
	α Hydræ	255.15	3.29,0	27,9	27,1	23,9	24,8	26,2			255.18.26,58	G.
	(b) Regulus R. M.	335.45	1.23,5	24,3	22,8	21,8	20,8	22,0	16,911	- 2.22,90	335.43.59,67	G.
	Regulus	234.35	1.18,9	16,7	16,7	13,8	14,0	16,8			234.36.16,18	G.
	(c) γ Urs. Maj. R. M. .	17.35	0.58,0	59,2	57,2	54,5	54,9	53,9	16,798	- 2.20,54 - 0,21	17.33.35,55	G.
	γ Ursæ Majoris	192.45	1.39,0	41,3	38,7	39,0	37,1	37,1		+ 0,84	192.46.39,59	G.
Mar. 25	(d) Jupiter N.L.	223.50	2.10,3	11,9	10,4	9,7	8,8	7,7			223.52. 9,87	G.
	α Cephei SP. R. M.	81. 5	0.34,8	36,1	32,5	35,1	32,5	35,8	20,592	- 3.39,63	81. 1.54,85	G.
	α Cephei SP.	129.15	3.22,5	22,9	20,2	20,4	16,9	20,3			129.18.20,62	G.
	β Cephei SP. R.M.	73. 5	0.49,0	50,1	47,9	48,3	46,0	47,8	10,790	- 15,32	73. 5.32,88	G.
	β Cephei SP.	137.10	4.43,8	44,6	42,2	41,2	40,2	41,9			137.14.42,78	G.
	(e) Regulus R. M.	335.45	0.58,2	59,9	58,3	57,0	57,2	56,3	15,655	- 1.56,73	335.44. 1,10	G.
	Regulus	234.35	1.19,2	17,1	17,6	13,7	14,0	16,6			234.36.16,40	G.
	α Urs. Maj. R. M. .	25.35	1.29,2	31,7	29,0	28,2	26,1	28,2	13,464	- 1.11,06	25.35.17,71	G.
	α Ursæ Majoris ...	184.45	0. 1,9	3,8	2,0	0,9	0,0	0,0			184.45. 1,43	G.
Mar. 26	Vesta	233.40	3.34,1	35,8	34,2	31,3	32,1	32,2			233.43.33,37	G.
	α Cassiop. SP. R.M.	87.20	0.12,1	12,2	13,0	11,9	9,1	10,3	21,854	- 4. 5,93	87.16. 5,50	G.
	α Cassiopeiæ SP. ...	123. 0	4.12,5	12,8	11,0	10,0	6,9	9,8			123. 4.10,62	G.
	Polaris SP. R. M. .	54.30	2.13,2	15,0	11,0	10,9	10,9	11,6	15,469	- 1.52,85	54.30.19,30	G.
	(f) Polaris SP.	155.45	4.55,0	57,9	56,0	55,5	53,6	54,2			155.49.55,37	G.
	(g) Spica R.	312.40	0.52,9	53,9	53,9	50,7	51,0	51,1			312.40.52,27	G.
	Spica	257.35	4.25,0	24,5	25,0	21,8	20,0	22,6			257.39.23,27	G.
	Saturn S.L.	257.35	1.22,6	21,2	22,0	19,0	18,1	21,1			257.36.20,70	G.
Mar. 29	(h) ⊙ N.L. M.	243.35	0.61,5	62,1	59,8	59,2	59,5	59,1	11,455	- 29,18	243.35.31,05	G.
	β Tauri R. M.	351.25	0.50,2	54,1	50,2	50,4	52,0	50,0	11,128	- 22,36	351.25.28,82	G.
	β Tauri	218.50	4.43,1	47,8	41,9	42,0	45,0	41,1			218.54.43,63	G.
	Jupiter N.L.	223.50	2.51,0	56,0	51,8	52,1	52,8	49,0			223.52.52,20	G.
	Pollux R. M.	351.20	3. 2,1	5,9	4,1	1,9	3,2	1,5	10,891	- 17,42	351.22.45,78	G.
	Pollux	218.55	2.28,0	31,1	25,3	27,0	29,8	27,6			218.57.28,20	G.
	(i) ☽ N.L. M.	231.50	3.33,2	35,9	31,8	30,6	33,8	32,5	13,064	- 1. 2,63 + 7,27	231.52.37,71	G.
	☽ N.L. M.	231.50	3.33,2	35,9	31,8	30,6	33,8	32,5	12,930	- 59,92 + 3,64	231.52.36,79	G.
	☽ N.L. M.	231.50	3.33,2	35,9	31,8	30,6	33,8	32,5	12,770	- 56,59	231.52.36,48	G.
	☽ N.L. M.	231.50	3.33,2	35,9	31,8	30,6	33,8	32,5	12,605	- 53,15 - 3,64	231.52.36,28	G.
	☽ N.L. M.	231.50	3.33,2	35,9	31,8	30,6	33,8	32,5	12,420	- 49,29 - 7,27	231.52.36,51	G.

(a) Limb uneven: taken at the five wires.
(b) Large unsteady blur.
(c) Hurried: taken at 4th and 5th wires.
(d) Cloudy.
(e) Not good.
(f) No correction for runs.
(g) The star came on the fixed wire.
(h) The other limb cloudy.
(i) At the five wires.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	50 . 54 . 42,90	29,424	47,0	47,1	1 . 10,92	6,64		16 . 2,90	88 . 26 . 52,56	⊙.
	50 . 22 . 38,88				1 . 9,59	6,59			88 . 26 . 53,06	⊙.
	35 . 19 . 57,06	29,410	46,5	45,9	40,97	4,42	10,770	7,64	73 . 7 . 34,25	Venus.
	26 . 20 . 56,53		45,0	43,3					63 . 29 . 55,26	☽.
	26 . 20 . 55,70								63 . 29 . 54,43	☽.
	26 . 20 . 56,29				28,78	23 . 51,84		14 . 46,49	63 . 29 . 55,02	☽.
	26 . 20 . 56,87								63 . 29 . 55,60	☽.
	26 . 20 . 56,83								63 . 29 . 55,56	☽.
	29 . 36 . 45,10				33,03				67 . 24 . 26,41	μ Geminorum.
	28 . 42 . 28,73		43,7	43,1	31,84	0,81	11,796	18,14	66 . 29 . 49,90	Jupiter.
6,78	60 . 8 . 20,75	29,398	41,5	40,2	1 . 41,52				97 . 57 . 10,55	α Hydræ R.
	60 . 8 . 18,86								97 . 57 . 8,66	α Hydræ.
7,93	39 . 26 . 8,05	29,392	41,2	40,3	48,05				77 . 14 . 4,38	Regulus R.
	39 . 26 . 8,46								77 . 14 . 4,79	Regulus.
7,57	– 2 . 23 . 27,83	29,342	41,0	40,3	2,44				35 . 23 . 38,01	γ Urs. Maj. R.
	– 2 . 23 . 28,73								35 . 23 . 37,11	γ Urs. Majoris.
	28 . 42 . 2,15	29,006	44,3	43,7	31,36	0,80	8,282	18,48	66 . 29 . 59,47	Jupiter.
7,73	– 65 . 51 . 47,13	29,010	40,6	40,2	2 . 8,08				– 28 . 6 . 46,93	α Cephei SP. R.
	– 65 . 51 . 47,10								– 28 . 6 . 46,90	α Cephei SP.
7,83	– 57 . 55 . 25,16				1 . 31,83				– 20 . 9 . 48,71	β Cephei SP. R.
	– 57 . 55 . 24,94								– 20 . 9 . 48,49	β Cephei SP.
8,75	39 . 26 . 6,62		39,8	39,2	47,53				77 . 14 . 2,43	Regulus R.
	39 . 26 . 8,68								77 . 14 . 4,49	Regulus.
9,57	– 10 . 25 . 9,99	28,992	39,3		10,63				27 . 21 . 47,66	α Urs. Maj. R.
	– 10 . 25 . 6,29								27 . 21 . 51,36	α Urs. Majoris.
	38 . 33 . 25,65	29,362	37,4	35,8	46,95	4,07			76 . 21 . 16,81	Vesta.
8,06	– 72 . 5 . 57,78	29,372	36,7	35,7	3 . 0,66				– 34 . 21 . 50,16	α Cassiop. SP. R.
	– 72 . 5 . 57,10								– 34 . 21 . 49,48	α Cassiop. SP.
7,34	– 39 . 20 . 11,58				48,31				– 1 . 33 . 51,61	Polaris SP. R.
	– 39 . 20 . 12,35								– 1 . 33 . 52,38	Polaris SP.
7,77	62 . 29 . 15,45	29,395	37,0	34,5	1 . 53,13				100 . 18 . 16,86	Spica R.
	62 . 29 . 15,55								100 . 18 . 16,96	Spica.
	62 . 26 . 12,98		35,8	34,6	1 . 52,88	0,85	10,965	9,48	100 15 . 3,81	Saturn.
	48 . 25 . 23,33	29,450	46,2	47,2	1 . 5,01	6,39		16 . 1,60	86 . 29 . 31,83	⊙.
6,23	23 . 44 . 38,90	29,520	44,8	46,1	25,52				61 . 32 . 12,70	β Tauri R.
	23 . 44 . 35,91								61 . 32 . 9,71	β Tauri.
	28 . 42 . 44,48	29,540		44,9	31,87	0,79	8,290	18,40	66 . 30 . 42,24	Jupiter.
7,49	23 . 47 . 21,94	29,595	43,7	43,2	25,79				61 . 34 . 56,01	Pollux R.
	23 . 47 . 20,48								61 . 34 . 54,55	Pollux.
	36 . 42 . 29,99	29,606	41,5	40,9					74 . 12 . 6,97	☽.
	36 . 42 . 29,07								74 . 12 . 6,05	☽.
	36 . 42 . 28,76				43,83	33 . 43,32		15 . 28,19	74 . 12 . 5,74	☽.
	36 . 42 . 28,56								74 . 12 . 5,54	☽.
	36 . 42 . 28,79								74 . 12 . 5,77	☽.

Coincidence of Micrometer Wire with fixed Wire $= 10^{r},055$. One revolution = 20″,843.
Correction for Runs = + 0″,8. From Mar. 29. = + 0″,9.
Adopted Zenith Point = 195°. 10′. 7″,72.
Assumed Co-latitude = 37°. 47′. 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Mar. 29	*k* Leonis	232 . 15	3 . 45,0	50,4	45,0	44,5	46,0	43,1			232 . 18 . 45,78	G.
Mar. 30	Jupiter S.L.	223 . 50	3 . 42,9	46,5	40,1	42,5	43,0	39,8			223 . 53 . 42,58	G.
	Castor R. M.	355 . 10	3 . 5,8	11,2	7,9	6,0	9,8	5,8	12,770	− 56,59	355 . 12 . 11,24	G.
	Castor	215 . 5	2 . 63,0	65,0	61,0	61,0	61,9	59,2			215 . 8 . 1,93	G.
	Pollux R. M.	351 . 20	3 . 6,1	10,9	6,7	7,0	9,0	5,2	11,109	− 21,96	351 . 22 . 45,61	G.
	Pollux	218 . 55	2 . 30,9	33,5	27,8	28,9	31,9	28,7			218 . 57 . 30,37	G.
	γ Leonis	226 . 40	2 . 17,7	21,0	17,0	16,5	18,0	16,0			226 . 42 . 17,77	G.
	α Ursæ Maj. R. M.	25 . 35	2 . 6,0	9,7	5,9	5,8	6,8	4,1	15,240	− 1 . 48,07	25 . 35 . 18,38	G.
	(*a*) α Ursæ Majoris	184 . 40	4 . 56,5	61,9	56,1	57,3	59,0	56,9			184 . 44 . 57,95	G.
	(*b*) ☽ N.L.	237 . 25	2 . 28,3	29,5	25,5	26,1	28,0	27,5		+ 8,22	237 . 27 . 35,77	G.
	☽ N.L. M.	237 . 25	2 . 28,3	29,5	25,5	26,1	28,0	27,5	9,922	+ 2,77 + 4,11	237 . 27 . 34,43	G.
	☽ N.L. M.	237 . 25	2 . 28,3	29,5	25,5	26,1	28,0	27,5	9,741	+ 6,54	237 . 27 . 34,09	G.
	☽ N.L. M.	237 . 25	2 . 28,3	29,5	25,5	26,1	28,0	27,5	9,550	+ 10,52 − 4,11	237 . 27 . 33,96	G.
	☽ N.L. M.	237 . 25	2 . 28,3	29,5	25,5	26,1	28,0	27,5	9,312	+ 15,48 − 8,22	237 . 27 . 34,81	G.
	Vesta	233 . 20	2 . 47,2	49,7	44,0	44,4	46,8	46,1			233 . 22 . 46,45	G.
	α Cassiop. SP. R. M.	87 . 15	2 . 7,0	9,3	6,2	5,6	5,5	3,8	12,827	− 57,78	87 . 16 . 8,52	G.
	(*c*) α Cassiopeiæ SP.	123 . 0	4 . 3,6	6,8	1,5	2,0	1,0	0,9		− 0,22	123 . 4 . 2,55	G.
	Polaris SP. R. M.	54 . 30	1 . 38,7	42,0	34,3	36,9	39,2	37,0	13,706	− 1 . 16,10	54 . 30 . 21,97	G.
	Polaris SP.	155 . 45	4 . 50,0	54,2	49,9	49,9	50,8	49,0			155 . 49 . 50,78	G.
	η Urs. Maj. R. M.	13 . 5	1 . 31,0	34,2	28,7	30,9	33,8	30,7	13,915	− 1 . 20,45	13 . 5 . 11,13	G.
	η Urs. Majoris	197 . 15	0 . 4,8	6,0	2,9	2,6	5,0	3,0			197 . 15 . 4,05	G.
	(*d*) Saturn S.L.	257 . 30	0 . 45,0	46,5	44,0	44,2	44,7	42,8			257 . 30 . 44,55	G.
Mar. 31	Jupiter N.L.	223 . 50	3 . 18,6	20,3	17,7	17,2	19,3	16,2			223 . 53 . 18,32	G.
	Regulus R. M.	335 . 45	0 . 37,8	40,2	36,0	36,7	39,2	37,0	14,711	− 1 . 37,05	335 . 44 . 0,78	G.
	Regulus	234 . 35	1 . 17,0	17,3	15,4	12,7	14,8	15,2			234 . 36 . 15,43	G.
	k Leonis	232 . 15	3 . 45,5	48,0	44,0	44,0	44,7	42,8			232 . 18 . 44,93	G.
	α Urs. Maj. R. M.	25 . 35	1 . 12,4	16,0	11,1	12,0	12,7	10,8	12,718	− 55,51	25 . 35 . 17,02	G.
	(*e*) α Urs. Majoris	184 . 40	4 . 59,5	62,5	59,6	58,8	59,0	58,0			184 . 44 . 59,57	G.
	Vesta	233 . 15	3 . 9,8	11,1	8,0	7,0	8,8	6,5			233 . 18 . 8,63	G.
	(*f*) ☽. N.L.	243 . 40	2 . 30,0	29,7	27,5	26,0	28,1	27,3		+ 8,82	243 . 42 . 36,99	G.
	☽. N.L. M.	243 . 40	2 . 30,0	29,7	27,5	26,0	28,1	27,3	9,860	+ 4,06 + 4,41	243 . 42 . 36,64	G.
	☽. N.L. M.	243 . 40	2 . 30,0	29,7	27,5	26,0	28,1	27,3	9,683	+ 7,75	243 . 42 . 35,92	G.
	☽. N.L. M.	243 . 40	2 . 30,0	29,7	27,5	26,0	28,1	27,3	9,435	+ 12,92 − 4,41	243 . 42 . 36,68	G.
	☽. N.L. M.	243 . 40	2 . 30,0	29,7	27,5	26,0	28,1	27,3	9,225	+ 17,30 − 8,82	243 . 42 . 36,65	G.
	c Virginis	243 . 5	3 . 27,2	26,6	25,1	22,6	25,0	24,6			243 . 8 . 25,28	G.
	γ^1 Virginis	247 . 50	4 . 45,5	46,3	44,2	42,4	42,6	42,1			247 . 54 . 44,00	G.
	(*g*) Polaris SP. R. M.	54 . 30	1 . 9,0	10,8	6,1	6,7	8,8	6,8	12,280	− 46,38	54 . 30 . 21,69	G.
	Polaris SP.	155 . 45	4 . 53,2	56,0	52,3	51,4	52,3	50,5			155 . 49 . 52,77	G.
	Spica R. M.	312 . 40	2 . 16,9	16,8	14,8	13,7	14,3	13,7	14,051	− 1 . 23,30	312 . 40 . 51,80	G.
	Spica	257 . 35	4 . 26,1	26,0	25,0	22,1	22,1	23,2			257 . 39 . 24,22	G.
	Saturn N.L.	257 . 25	3 . 55,2	56,5	55,8	51,7	54,0	52,0			257 . 28 . 54,32	G.
April 2	⊙ S.L. M.	242 . 35	1 . 7,6	8,4	6,8	4,3	6,7	4,6	13,525	− 1 . 12,33	242 . 34 . 54,10	G.
	⊙ N.L.	242 . 0	2 . 54,0	56,1	54,2	51,9	52,8	51,1			242 . 2 . 53,43	G.
	Venus S.L.	227 . 5	0 . 11,2	13,5	10,8	10,0	11,6	8,9			227 . 5 . 11,00	G.
	Polaris SP. R. M.	54 . 30	1 . 18,2	19,7	15,5	15,0	17,7	16,0	12,700	− 55,13	54 . 30 . 21,92	G.
	Polaris SP.	155 . 45	4 . 54,8	58,4	54,8	53,3	54,0	51,8			155 . 49 . 54,67	G.

(*a*) No correction for runs.
(*b*) Limb uneven, and very great motion. At the five wires.
(*c*) At the 4th wire.
(*d*) Cloudy: not good.
(*e*) No correction for runs.
(*f*) At the five wires.
(*g*) Not good.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	37 . 8 . 38,06				44,52				74 . 56 . 30,86	*k* Leonis.
	28 . 43 . 34,86	29,250	49,7	51,5	31,16	0,79	11,795	18,13	66 . 30 . 55,38	Jupiter.
6,58	19 . 57 . 56,48	29,300	49,8	50,5	20,73				57 . 45 . 25,49	Castor R.
	19 . 57 . 54,21								57 . 45 . 23,22	Castor.
7,99	23 . 47 . 22,11				25,16				61 . 34 . 55,55	Pollux R.
	23 . 47 . 22,65								61 . 34 . 56,09	Pollux.
	31 . 32 . 10,05	29,350	47,5	47,1	35,31				69 . 19 . 53,64	γ Leonis.
8,17	− 10 . 25 . 10,66			46,8	10,59				27 . 21 . 47,03	α Urs. Maj. R.
	− 10 . 25 . 9,77								27 . 21 . 47,92	α Urs. Majoris.
	42 . 17 . 28,05	29,371	47,0	46,5					79 . 42 . 38,74	☽.
	42 . 17 . 26,71								79 . 42 . 37,40	☽.
	42 . 17 . 26,37				52,42	38 . 30,92		15 . 40,91	79 . 42 . 37,06	☽.
	42 . 17 . 26,24								79 . 42 . 36,93	☽.
	42 . 17 . 27,09								79 . 42 . 37,78	☽.
	38 . 12 . 38,73		46,7	46,3	45,39	4,01			76 . 0 . 28,39	Vesta.
5,53	− 72 . 6 . 0,80		46,6		2 . 56,68				− 34 . 21 . 49,20	α Cassiop. SP. R.
	− 72 . 6 . 5,17								− 34 . 21 . 53,57	α Cassiop. SP.
6,38	− 39 . 20 . 14,25				47,26				− 1 . 33 . 53,23	Polaris SP. R.
	− 39 . 20 . 16,94								− 1 . 33 . 55,92	Polaris SP.
7,59	2 . 4 . 56,59				2,10				39 . 52 . 6,97	η Urs. Maj. R.
	2 . 4 . 56,33								39 . 52 . 6,71	η Urs. Majoris.
	62 . 20 . 36,83		45,8	45,6	1 . 49,80	0,85	10,970	9,54	100 . 9 . 24,52	Saturn.
	28 . 43 . 10,60	29,698	44,7	44,0	32,11	0,79	8,277	18,53	66 . 31 . 8,73	Jupiter.
8,11	39 . 26 . 6,94	29,736	41,3	40,2	48,61				77 . 14 . 3,83	Regulus R.
	39 . 26 . 7,71								77 . 14 . 4,60	Regulus.
	37 . 8 . 37,21		40,4	39,6	44,84				74 . 56 . 30,33	*k* Leonis.
8,30	− 10 . 25 . 9,30				10,89				27 . 21 . 48,09	α Urs. Maj. R.
	− 10 . 25 . 8,15								27 . 21 . 49,24	α Urs. Majoris.
	38 . 8 . 0,91	29,740	40,3	39,5	46,48	4,00			75 . 55 . 51,67	Vesta.
	48 . 32 . 29,27								85 . 53 . 8,84	☽.
	48 . 32 . 28,92								85 . 53 . 8,49	☽.
	48 . 32 . 28,20				1 . 6,97	43 . 28,71		15 . 53,03	85 . 53 . 7,77	☽.
	48 . 32 . 28,96								85 . 53 . 8,53	☽.
	48 . 32 . 28,93								85 . 53 . 8,50	☽.
	47 . 58 . 17,56				1 . 5,65				85 . 46 . 31,49	*c* Virginis.
	52 . 44 . 36,28				1 . 17,75				90 . 33 . 2,31	γ^1 Virginis.
7,23	− 39 . 20 . 13,97	29,750	39,8	38,7	48,62				− 1 . 33 . 54,31	Polaris SP. R.
	− 39 . 20 . 14,95								− 1 . 33 . 55,29	Polaris SP.
8,01	62 . 29 . 15,92				1 . 53,50				100 . 18 . 17,70	Spica R.
	62 . 29 . 16,50								100 . 18 . 18,28	Spica.
	62 . 18 . 46,60		38,5	37,9	1 . 52,86	0,86	9,131	9,63	100 . 7 . 56,51	Saturn.
	47 . 24 . 46,38	29,348	41,6	42,7	1 . 3,12	6,28		16 . 0,50	84 . 56 . 51,00	⊙.
	46 . 52 . 45,71				1 . 1,96	6,23			84 . 56 . 50,22	⊙.
	31 . 55 . 3,28	29,490	42,4	42,5	36,36	4,28	10,840	8,32	69 . 42 . 35,32	Venus.
8,30	− 39 . 20 . 14,20	29,756	37,8	36,8	48,82				− 1 . 33 . 54,74	Polaris SP. R.
	− 39 . 20 . 13,05								− 1 . 33 . 53,59	Polaris SP.

Coincidence of Micrometer Wire with fixed Wire = 10r,055. One revolution = 20″,843.
Correction for Runs = + 0″,9.
Adopted Zenith Point = 195°. 10′. 7″,72.
Assumed Co-latitude = 37° . 47′ . 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
April 2	Spica R. M.	312.40	2.12,7	13,3	11,5	10,2	11,3	10,0	13,873	– 1.19,58	312.40.51,99	G.
	Spica	257.35	4.24,8	24,3	23,9	20,7	21,2	22,0			257.39.22,95	G.
	m Virginis	255.10	3.48,0	48,5	47,4	43,7	46,0	44,8			255.13.46,52	G.
	(*a*) ☽ S.L. M.	257.25	3.45,3	45,9	44,8	41,4	42,3	41,5	10,205	– 3,12 + 4,44	257.28.44,97	G.
	☽ N.L.	256.55	1. 9,2	8,2	9,3	4,9	6,1	5,9		– 1,86	256.56. 5,44	G.
	Saturn S.L.	257.25	1.17,9	17,0	16,7	14,0	15,0	14,4			257.26.15,87	G.
April 3	Arcturus R. M.	343. 0	1.17,8	19,6	19,2	16,8	17,3	16,7	13,553	– 1.12,92	343. 0. 5,01	G.
	Arcturus	227.20	0.12,0	14,8	11,6	11,1	11,9	11,1			227.20.12,08	G.
	ε Bootis R. M.	350.40	3.14,2	16,5	15,4	13,3	13,8	12,4	8,830	+ 25,53	350.43.39,89	G.
	ε Bootis	219.35	1.35,7	38,3	34,5	34,3	36,3	33,7			219.36.35,52	G.
	(*b*) ☽ S.L.	263.35	4.62,9	63,9	62,7	58,9	61,0	60,5		+ 8,18	263.40. 9,83	G.
	☽ S.L. M.	263.35	4.62,9	63,9	62,7	58,9	61,0	60,5	9,905	+ 3,12 + 4,09	263.40. 8,86	G.
	☽ S.L. M.	263.35	4.62,9	63,9	62,7	58,9	61,0	60,5	9,787	+ 5,59	263.40. 7,24	G.
	☽ S.L. M.	263.35	4.62,9	63,9	62,7	58,9	61,0	60,5	9,553	+ 10,46 – 4,09	263.40. 8,02	G.
	☽ S.L. M.	263.35	4.62,9	63,9	62,7	58,9	61,0	60,5	9,404	+ 13,57 – 8,18	263.40. 7,04	G.
April 4	☉ S.L. M.	241.50	0.58,4	59,4	58,5	55,5	58,3	55,8	15,555	– 1.54,64	241.49. 3,04	G.
	☉ N.L.	241.15	2. 4,6	5,0	4,0	1,0	3,3	1,6			241.17. 3,32	G.
	Castor R. M.	355.10	3. 4,6	9,9	7,2	5,5	8,2	4,6	12,613	– 53,32	355.12.13,43	G.
	Castor	215. 5	3. 2,1	4,8	2,7	0,5	2,9	0,0			215. 8. 2,25	G.
	Procyon R. M.	328.35	2.28,5	32,2	26,3	27,7	30,2	28,0	12,298	– 46,75	328.36.42,13	G.
	Procyon	241.40	3.34,2	35,0	32,6	30,2	34,7	32,1			241.43.33,23	G.
	Vesta	233. 0	2.13,3	16,0	12,4	11,9	14,0	13,3			233. 2.13,55	G.
	γ Cassiop. SP. R. M.	83. 5	3.22,2	25,1	22,2	22,0	21,5	21,2	19,128	– 3. 9,11	83. 5.13,36	G.
	γ Cassiop. SP.	127.15	0. 1,0	5,2	1,7	0,9	2,2	0,8			127.15. 1,97	G.
	Polaris SP. R. M.	54.30	1. 5,2	9,3	4,8	4,8	6,0	4,7	12,227	– 45,27	54.30.20,56	G.
	Polaris SP.	155.45	4.52,1	57,0	53,2	51,9	53,2	51,0			155.49.53,22	G.
	η Urs. Maj. R. M.	13. 5	1.25,5	30,4	24,9	25,3	27,8	25,4	13,580	– 1.13,47	13. 5.13,13	G.
	η Urs. Majoris	197.15	0. 3,5	6,2	3,4	2,3	4,2	2,0			197.15. 3,60	G.
	Saturn S.L.	257.20	3.15,2	16,9	16,0	13,2	15,1	13,6			257.23.15,10	G.
April 5	(*c*) ☉ N.L. M.	240.55	1. 4,2	4,7	3,0	0,0	2,5	1,6	15,000	– 1.43,06	240.54.19,64	G.
	☉ S.L. M.	241.25	2.59,8	61,4	59,3	56,4	59,3	58,6	15,000	– 1.43,06	241.26.16,16	G.
April 7	(*d*) β Leonis R. M.	338.25	3. 5,6	7,8	6,2	4,0	5,9	3,3	12,420	– 49,29	338.27.16,21	G.
	β Leonis	231.50	3. 3,8	5,9	2,7	2,1	3,4	2,0			231.53. 3,35	G.
	Vesta	232.50	3. 4,9	8,0	3,4	3,4	4,9	2,8			232.53. 4,60	G.
	δ Urs. Maj. R. M.	20.55	1. 4,9	9,7	6,0	4,8	6,4	4,3	16,330	– 2.10,79	20.53.55,24	G.
	δ Urs. Majoris	189.25	1.27,9	30,4	26,8	27,8	28,0	28,0			189.26.28,17	G.
	α Cassiop. SP. R. M.	87.15	2. 4,5	7,8	5,2	3,9	2,5	2,9	12,451	– 49,94	87.16.14,54	G.
	α Cassiop. SP.	123. 0	4. 7,6	10,0	5,5	5,1	4,2	4,5			123. 4. 6,18	G.
	Polaris SP. R. M.	54.30	1. 5,9	9,0	3,7	4,2	6,5	4,8	11,890	– 38,24	54.30.27,46	G.
	Polaris SP.	155.45	4.54,0	58,4	54,9	54,0	54,0	52,9			155.49.54,75	G.
	A.S.C. 1600. M.	261.30	2. 3,8	5,0	4,8	1,7	4,0	1,5	10,822	– 15,99	261.31.47,49	G.
	94 Virginis	255.25	2.51,2	52,0	50,9	48,0	50,1	49,1			255.27.50,25	G.
	Saturn N.L.	257.15	3.34,1	35,1	32,7	31,2	32,5	33,2			257.18.33,17	G.
April 8	☉ S.L. M.	240.20	1. 5,2	7,0	4,3	3,2	4,5	4,7	16,814	– 2.20,88	240.18.43,95	G.
	☉ N.L.	239.45	1.47,3	49,7	45,8	44,9	46,3	46,2			239.46.46,72	G.
	Venus S.L.	225.10	0.20,3	22,9	17,7	20,5	21,1	18,3			225.10.20,13	G.

(*a*) Both limbs very uneven: the S.L. taken at 2^d wire and the N.L. at 3^d wire: correction applied for defect of illumination of N.L. = – 1″.86.

(*b*) No correction for runs: limb very uneven and unsteady.

(*c*) Cloudy: the observation of S.L. taken on micrometer wire.

(*d*) About four hours before this observation, a very heavy hail-storm occurred with thunder and lightning: the zenith point changes here.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
"	° ' "	Inch.	°	°	' "	' "	r	' "	° ' "	
7,47	62 . 29 . 15,73				1 . 53,98				100 . 18 . 17,99	Spica R.
	62 . 29 . 15,23								100 . 18 . 17,49	Spica.
	60 . 3 . 38,80				1 . 43,15				97 . 52 . 30,23	*m* Virginis.
	62 . 18 . 37,25		37,7	35,9	1 . 53,34	52 . 26,16		16 . 11,57	98 . 59 . 1,14	☽.
	61 . 45 . 57,72				1 . 50,79	52 . 10,02			98 . 58 . 58,34	☽.
	62 . 16 . 8,15		37,3		1 . 53,15	0,85	10,910	8,91	100 . 4 . 59,82	Saturn.
8,55	32 . 10 . 2,71	30,226	36,6	35,7	38,16				69 . 57 . 49,15	Arcturus R.
	32 . 10 . 4,36								69 . 57 . 50,80	Arcturus.
7,71	24 . 26 . 27,83				27,58				62 . 14 . 3,69	ε Bootis R.
	24 . 26 . 27,80								62 . 14 . 3,66	ε Bootis.
	68 . 30 . 2,11	30,228	36,5	36,3					105 . 8 . 3,39	☽.
	68 . 30 . 1,14								105 . 8 . 2,42	☽.
	68 . 29 . 59,52				2 . 32,79	55 . 23,44		16 . 16,35	105 . 8 . 0,80	☽.
	68 . 30 . 0,30								105 . 8 . 1,58	☽.
	68 . 29 . 59,32								105 . 8 . 0,60	☽.
	46 . 38 . 55,32	30,285	42,7	43,3	1 . 3,33	6,20		15 . 59,90	84 . 11 . 0,83	☉.
	46 . 6 . 55,60				1 . 2,17	6,14			84 . 10 . 59,81	☉.
7,84	19 . 57 . 54,29	30,272	42,1	41,2	21,83				57 . 45 . 24,40	Castor R.
	19 . 57 . 54,53								57 . 45 . 24,64	Castor.
7,68	46 . 33 . 25,59				1 . 3,37				84 . 21 . 37,24	Procyon R.
	46 . 33 . 25,51								84 . 21 . 37,16	Procyon.
	37 . 52 . 5,83	30,254	38,6	37,3	47,05	3,94			75 . 39 . 57,22	Vesta.
7,67	– 67 . 55 . 5,64	30,228	37,6	36,5	2 . 28,33				– 30 . 10 . 25,69	γ Cassiop. SP. R.
	– 67 . 55 . 5,75								– 30 . 10 . 25,80	γ Cassiop. SP.
6,89	– 39 . 20 . 12,84				49,63				– 1 . 33 . 54,19	Polaris SP. R.
	– 39 . 20 . 14,50								– 1 . 33 . 55,85	Polaris SP.
8,37	2 . 4 . 54,59	30,225	37,5	35,7	2,21				39 . 52 . 5,08	η Urs. Maj. R.
	2 . 4 . 55,88								39 . 52 . 6,37	η Urs. Majoris.
	62 . 13 . 7,38	30,220	37,2	35,0	1 . 54,87	0,86	10,954	9,37	100 . 2 . 0,30	Saturn.
	45 . 44 . 11,92	30,050	41,6	44,3	1 . 0,76	6,10		15 . 59,60	83 . 48 . 14,46	☉.
	46 . 16 . 8,44				1 . 1,90	6,16			83 . 48 . 12,86	☉.
9,78	36 . 42 . 54,25	29,042	41,6	40,0	43,08				74 . 30 . 45,61	β Leonis R.
	36 . 42 . 52,89								74 . 30 . 44,25	β Leonis.
	37 . 42 . 54,14				44,67	3,89			75 . 30 . 43,20	Vesta.
11,71	– 5 . 43 . 44,78				5,80				32 . 3 . 17,70	δ Urs. Maj. R.
	– 5 . 43 . 42,29								32 . 3 . 20,19	δ Urs. Majoris.
10,36	– 72 . 6 . 4,08	29,038	40,5	38,9	2 . 57,41				– 34 . 21 . 53,21	α Cassiop. SP. R.
	– 72 . 6 . 4,28								– 34 . 21 . 53,41	α Cassiop. SP.
11,11	– 39 . 20 . 17,00	29,020	40,0	38,1	47,49				– 1 . 33 . 56,21	Polaris SP. R.
	– 39 . 20 . 15,71								– 1 . 33 . 54,92	Polaris SP.
	66 . 21 . 37,03	29,016	39,3	37,4	2 . 11,86				104 . 10 . 57,17	A.S.C. 1600.
	60 . 17 . 39,79				1 . 41,42				98 . 6 . 29,49	94 Virginis.
	62 . 8 . 22,71				1 . 49,39	0,86	9,186	9,06	99 . 57 . 28,58	Saturn.
	45 . 8 . 33,49	29,000	43,0	45,9	57,26	6,04		15 . 58,80	82 . 40 . 34,19	☉.
	44 . 36 . 36,26				56,20	5,98			82 . 40 . 33,56	☉.
	30 . 0 . 9,67	29,026	48,0	49,0	32,74	4,22	10,843	8,33	67 . 47 . 38,14	Venus.

Coincidence of Micrometer wire with fixed wire = 10r,055. One revolution = 20",843.
Correction for Runs = + 0",9. From April 7. + 0",3.
Adopted Zenith point = 195° . 10'. 7",72. From April 7. = 195°. 10'. 10",46.
Assumed Co-latitude = 37° . 47'. 8",28.

No assignable reason for change of zenith point: probably owing to a cause which will be mentioned farther on.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
April 9	Vesta	232 . 45	3 . 17,4	19,1	15,2	15,8	16,2	16,7			232 . 48 . 16,77	G.
	δ Corvi R. M.	307 . 25	1 . 4,8	6,8	4,5	3,5	4,7	3,0	17,602	– 2 . 37,30	307 . 23 . 27,27	G.
	δ Corvi	262 . 55	1 . 54,0	56,1	54,6	52,0	53,3	52,2			262 . 56 . 53,72	G.
	α Cassiop. SP. R.M.	87 . 15	2 . 5,3	7,5	6,0	4,1	3,2	2,8	12,503	– 51,03	87 . 16 . 13,80	G.
	α Cassiop. SP.	123 . 0	4 . 10,0	12,0	8,7	8,1	7,9	7,4			123 . 4 . 9,07	G.
April 11	Jupiter N.L.	223 . 55	1 . 42,8	45,1	39,0	41,7	42,3	40,5			223 . 56 . 41,92	G.
	Vesta	232 . 40	4 . 32,1	34,7	30,0	30,1	31,4	30,0			232 . 44 . 31,43	G.
	α Cassiop. SP. R.M.	87 . 15	2 . 4,8	7,5	4,8	4,3	3,3	2,9	12,477	– 50,49	87 . 16 . 14,13	G.
	α Cassiop. SP.	123 . 0	4 . 8,7	11,0	6,2	6,8	4,9	5,3			123 . 4 . 7,18	G.
	Polaris SP. R. M.	54 . 30	1 . 3,5	6,5	1,3	2,0	3,8	1,7	11,832	– 37,04	54 . 30 . 26,11	G.
	Polaris SP.	155 . 45	4 . 54,1	58,2	54,7	53,3	54,0	52,1			155 . 49 . 54,45	G.
	Spica R. M.	312 . 40	2 . 38,1	39,2	37,2	35,5	37,8	35,8	15,180	– 1 . 46,82	312 . 40 . 50,48	G.
	Spica	257 . 35	4 . 30,5	30,3	29,8	27,5	27,5	28,0			257 . 39 . 28,98	G.
	η Ursæ Maj. R. M.	13 . 5	1 . 5,2	9,0	4,7	4,5	5,8	3,2	12,423	– 49,36	13 . 5 . 16,06	G.
	η Ursæ Majoris	197 . 15	0 . 5,5	6,2	3,9	3,7	4,3	3,7			197 . 15 . 4,55	G.
	A.S.C. 1600. M.	261 . 30	2 . 5,0	6,0	5,1	3,2	4,3	2,0	10.920	– 18,02	261 . 31 . 46,26	G.
	94 Virginis	255 . 25	2 . 51,1	52,1	50,8	47,8	50,5	48,8			255 . 27 . 50,22	G.
	Saturn N.L.	257 . 10	2 . 24,8	24,9	23,4	22,0	23,2	23,2			257 . 12 . 23,60	G.
April 13	Polaris SP. R. M.	54 . 30	1 . 4,1	6,6	1,0	2,2	4,8	2,3	11,790	– 36,16	54 . 30 . 27,36	G.
	Polaris SP.	155 . 45	4 . 51,3	55,7	50,0	50,8	52,1	49,7			155 . 49 . 51,65	G.
	(*a*) Spica R. M.	312 . 40	2 . 4,9	5,9	3,0	1,7	4,2	2,5	13,576	– 1 . 13,39	312 . 40 . 50,33	G.
	Spica	257 . 35	4 . 30,2	31,2	28,7	26,4	28,2	28,1			257 . 39 . 28,85	G.
	η Ursæ Maj. R. M.	13 . 5	1 . 4,3	6,5	2,7	2,5	4,7	2,0	12,323	– 47,28	13 . 5 . 16,52	G.
	η Ursæ Majoris	197 . 15	0 . 4,2	5,0	1,4	2,6	3,7	2,4			197 . 15 . 3,22	G.
	A.S.C. 1600. M.	261 . 30	2 . 5,0	5,7	4,1	2,9	4,3	2,3	10,930	– 18,23	261 . 31 . 45,84	G.
	94 Virginis	255 . 25	2 . 50,2	50,9	47,2	46,3	49,2	47,2			255 . 27 . 48,53	G.
	Saturn N.L.	257 . 5	4 . 18,3	19,0	16,2	15,0	16,0	15,9			257 . 9 . 16,78	G.
April 15	(*b*) ⊙ N.L. M.	237 . 15	0 . 4,9	7,0	1,9	3,8	4,2	5,0	14,510	– 1 . 32,85	237 . 13 . 31,62	G.
	⊙ S.L.	237 . 45	0 . 24,0	25,0	20,3	20,9	22,5	21,3		+ 0,51	237 . 45 . 22,84	G.
	∗ Æ $10^{h}.44^{m}.25^{s}$.M.	183 . 35	0 . 22,1	21,9	19,2	19,7	20,3	20,0	14,510	– 1 . 32,85	183 . 33 . 47,68	G.
	(*c*) ∗ Æ $10^{h}.52^{m}.10^{s}$.	183 . 20	2 . 61,0	62,4	59,6	60,2	60,7	58,2			183 . 23 . 0,38	G.
	Vesta	232 . 40	0 . 15,3	16,6	12,3	14,2	16,3	13,4			232 . 40 . 14,68	G.
	γ Cass. SP. R. M.	83 . 5	1 . 5,3	7,2	3,5	5,0	5,0	2,8	12,086	– 42,34	83 . 5 . 22,48	G.
	γ Cassiopeiæ SP.	127 . 10	4 . 61,0	63,2	59,0	60,0	59,8	59,7			127 . 15 . 0,50	G.
	(*d*) Polaris SP. R. M.	54 . 30	1 . 11,9	13,4	8,0	9,8	10,9	9,8	12,177	– 44,23	54 . 30 . 26,42	G.
	Polaris SP.	155 . 45	4 . 53,6	57,2	52,2	52,9	53,3	51,2			155 . 49 . 53,45	G.
	Spica R. M.	312 . 40	2 . 6,7	7,5	5,9	4,7	6,0	4,5	13,552	– 1 . 12,90	312 . 40 . 53,00	G.
	Spica	257 . 35	4 . 28,0	27,2	27,3	24,0	25,2	25,2			257 . 39 . 26,20	G.
	(*e*) η Ursæ Maj. R. M.	13 . 5	1 . 18,0	19,8	15,8	16,2	17,9	15,8	12,970	– 1 . 0,76	13 . 5 . 16,51	G.
	η Ursæ Majoris	197 . 15	0 . 5,3	5,8	3,2	3,3	3,8	3,0			197 . 15 . 4,07	G.
	Saturn N.L.	257 . 5	1 . 9,8	9,8	8,0	6,7	8,0	7,3			257 . 6 . 8,28	G.
April 16	⊙ S.L. M.	237 . 25	1 . 6,1	6,3	3,0	2,8	4,7	2,7	15,776	– 1 . 59,25	237 . 24 . 5,03	G.
	⊙ N.L.	236 . 50	2 . 15,3	17,2	11,9	11,8	13,8	13,0			236 . 52 . 13,85	G.
	Venus S.L.	223 . 5	2 . 57,7	61,4	56,0	57,5	60,2	54,2			223 . 7 . 57,87	G.
April 21	(*f*) ⊙ N.L. M.	235 . 10	0 . 5,2	6,7	2,7	1,7	5,0	1,8	14,860	– 1 . 40,14	235 . 8 . 23,71	G.
	⊙ S.L.	235 . 40	0 . 14,8	13,3	10,7	10,0	13,6	10,7			235 . 40 . 12,18	G.
	Polaris	158 . 55	2 . 43,6	47,4	42,1	44,8	44,7	41,0			158 . 57 . 43,95	G.
April 22	⊙ S.L. M.	235 . 20	1 , 28,7	28,0	22,7	24,5	25,3	25,0	14,088	– 1 . 24,06	235 . 20 . 1,66	G.
	⊙ N.L.	234 . 45	3 . 11,8	14,5	8,0	9,9	10,9	8,7			234 . 48 . 10,65	G.

(*a*) Very good.

(*b*) Without coloured glass: neither of the limbs good: the S.L. taken at the 5th wire.

(*c*) Four stars in the field; the brightest taken.

(*d*) Not satisfactory.

(*e*) Not good.

(*f*) Both limbs very good.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	37 . 38 . 6,31	29,450	43,4	42,5	44,93	3,86			75 . 25 . 55,66	Vesta.
10,50	67 . 46 . 43,19	29,445	41,8	39,3	2 . 22,66				105 . 36 . 14,13	δ Corvi R.
	67 . 46 . 43,26								105 . 36 . 14,20	δ Corvi.
11,44	– 72 . 6 . 3,34				2 . 59,72				– 34 . 21 . 54,78	α Cassiop. SP. R.
	– 72 . 6 . 1,39								– 34 . 21 . 52,83	α Cassiop. SP.
	28 . 46 . 31,46	29,650	45,3	46,4	31,98	0,76	8,462	16,60	66 . 34 . 27,56	Jupiter.
	37 . 34 . 20,97	29,680	42,0	40,3	45,38	3,83			75 . 22 . 10,80	Vesta.
10,66	– 72 . 6 . 3,67	29,684	41,3		3 . 0,80				– 34 . 21 . 56,19	α Cassiop. SP. R.
	– 72 . 6 . 3,28								– 34 . 21 . 55,80	α Cassiop. SP.
10,28	– 39 . 20 . 15,65				48,35				– 1 . 33 . 55,72	Polaris SP. R.
	– 39 . 20 . 16,01								– 1 . 33 . 56,08	Polaris SP.
9,73	62 . 29 . 19,98		41,5	40,5	1 . 52,83				100 . 18 . 21,09	Spica R.
	62 . 29 . 18,52								100 . 18 . 19,63	Spica.
10,31	2 . 4 . 54,40				2,15				39 . 52 . 4,83	η Urs. Maj. R.
	2 . 4 . 54,09								39 . 52 . 4,52	η Urs. Majoris.
	66 . 21 . 35,80	29,686	41,3	40,6	2 . 13,99				104 . 10 . 58,07	A.S.C. 1600.
	60 . 17 . 39,76				1 . 43,06				98 . 6 . 31,10	94 Virginis.
	62 . 2 . 13,14				1 . 50,69	0,86	9,170	9,22	99 . 51 . 20,47	Saturn.
9,51	– 39 . 20 . 16,90	29,785	48,2	46,1	47,93				– 1 . 33 . 56,55	Polaris SP. R.
	– 39 . 20 . 18,81								– 1 . 33 . 58,46	Polaris SP.
9,59	62 . 29 . 20,13				1 . 51,90				100 . 18 . 20,31	Spica R.
	62 . 29 . 18,39								100 . 18 . 18,57	Spica.
9,87	2 . 4 . 53,94				2,13				39 . 52 . 4,35	η Urs. Maj. R.
	2 . 4 . 52,76								39 . 52 . 3,17	η Urs. Majoris.
	66 . 21 . 35,38	29,788	47,0	45,2	2 . 13,16				104 . 10 . 56,82	A.S.C. 1600.
	60 . 17 . 38,07				1 . 42,42				98 . 6 . 28,77	94 Virginis.
	61 . 59 . 6,32				1 . 49,77	0,86	9,212	8,78	99 . 48 . 12,29	Saturn.
	42 . 3 . 21,16	30,135	49,4	51,3	52,82	5,69		15 . 56,90	80 . 7 . 13,47	☉.
	42 . 35 . 12,38				53,81	5,75			80 . 7 . 11,82	☉.
	– 11 . 36 . 22,78	30,148	47,8	46,2	12,16				26 . 10 . 33,34	∗ Æ$10^h.44^m.25^s$.
	– 11 . 47 . 10,08				12,36				25 . 59 . 45,84	∗ Æ$10^h.52^m.10^s$.
	37 . 30 . 4,22	30,150	46,6	45,0	45,54	3,76			75 . 17 . 54,28	Vesta.
11,49	– 67 . 55 . 12,02		44,7	42,8	2 . 26,02				– 30 . 10 . 29,76	γ Cassiop. SP. R.
	– 67 . 55 . 9,96								– 30 . 10 . 27,70	γ Cassiop. SP.
9,94	– 39 . 20 . 15,96				48,85				– 1 . 33 . 56,53	Polaris SP. R.
	– 39 . 20 . 17,01								– 1 . 33 . 57,58	Polaris SP.
9,60	62 . 29 . 17,46				1 . 54,04				100 . 18 . 19,78	Spica R.
	62 . 29 . 15,74								100 . 18 . 18,06	Spica.
10,29	2 . 4 . 53,95	30,149	44,1	42,6	2,17				39 . 52 . 4,40	η Urs. Maj. R.
	2 . 4 . 53,61								39 . 52 . 4,06	η Urs Majoris.
	61 . 55 . 57,82		43,8	42,1	1 . 51,57	0;86	9,223	8,67	99 . 45 . 5,48	Saturn.
	42 . 13 . 54,57	30,080	50,6	52,8	52,90	5,71		15 . 56,60	79 . 45 . 53,44	☉.
	41 . 42 . 3,39				51,92	5,65			79 . 45 . 54,54	☉.
	27 . 57 . 47,41	30,047		53,4	30,88	4,20	10,912	9,02	65 . 45 . 13,35	Venus.
	39 . 58 . 13,25	29,864	51,0	51,8	48,59	5,45		15 . 55,30	78 . 1 . 59,97	☉.
	40 . 30 . 1,72				49,51	5,51			78 . 1 . 58,70	☉.
	– 36 . 12 . 26,51	29,746	54,3	55,3	41,98				1 . 33 . 59,79	Polaris.
	40 . 9 . 51,20	29,748	55,5	57,2	48,21	5,47		15 . 55,10	77 . 41 . 47,12	☉.
	39 . 38 . 0,19				47,31	5,41			77 . 41 . 45,47	☉.

Coincidence of Micrometer Wire with fixed Wire = 10ʳ,055. One revolution = 20″,843.
Correction for Runs = +0″,3. From April 21. +0″,2.
Adopted Zenith Point = 195° . 10′ . 10″,46.
Assumed Co-latitude = 37° . 47′ . 8″,28.

Coincidence of Micrometer Wire with fixed Wire taken on April 19. and found to be unaltered.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
April 22	(*a*) Jupiter S.L........	224. 0	2 . 26,7	29,6	22,5	26,3	26,8	24,9			224. 2 . 26,15	G.
	(*b*) Regulus R. M.	335 . 45	0. 5,3	8,3	3,0	5,0	5,1	3,9	12,945	- 1. 0,24	335 . 44. 4,86	G.
	Regulus	234 . 35	1 . 19,8	20,1	16,0	15,0	16,6	17,3			234 . 36 . 17,48	G.
	α Urs. Maj. R. M..	25 . 35	1. 8,0	11,2	5,4	7,9	8,0	6,0	12,083	- 42,28	25 . 35 . 25,47	G.
	(*c*) *α* Ursæ Majoris	184 . 40	4 . 57,4	59,8	54,0	55,2	56,3	54,9			184 . 44 . 56,27	G.
	(*d*) ∗ Æ. $11^h. 17^m. 15^s$.	184. 0	0 . 14,1	13,4	10,3	11,2	11,5	11,9			184. 0 . 12,07	G.
	Vesta	232 . 40	2 . 61,5	62,3	58,7	57,8	60,5	58,8			232 . 42 . 59,95	G.
	δ Urs: Maj. R. M..	20 . 55	0 . 14,0	16,5	11,9	13,3	13,8	11,5	13,713	- 1 . 16,25	20 . 53 . 57,25	G.
	δ Ursæ Majoris.....	189 . 25	1 . 24,5	26,0	22,0	23,6	22,8	23,2			189 . 26 . 23,70	G.
	Polaris SP. R. M..	54 . 30	1. 5,2	7,3	1,3	3,3	5,0	2,5	11,650	- 33,24	54 . 30 . 30,86	G.
	Polaris SP.	155 . 45	4 . 52,0	55,0	49,7	49,8	49,8	48,9			155 . 49 . 50,90	G.
	Saturn S.L..........	256 . 55	0 . 36,0	36,0	33,0	33,0	34,3	35,6			256 . 55 . 34,32	G.
	υ Bootis.	236 . 25	4 . 47,4	49,0	44,3	43,7	45,0	44,0			236 . 29 . 45,60	G.
April 23	(*e*) Jupiter N.L.	224. 0	2 . 33,4	34,3	27,3	30,2	31,2	29,0			224. 2 . 30,92	G.
April 25	Venus S.L.	221 . 35	1 . 17,8	21,0	15,9	17,6	18,2	13,9			221 . 36 . 17,42	G.
	(*f*) ☽ N.L................	229 . 30	1 . 40,4	42,8	36,1	37,0	38,0	36,8		+ 6,62	229 . 31 . 45,15	G.
	☽ N.L. M.	229 . 30	1 . 40,4	42,8	36,1	37,0	38,0	36,8	9,953	+ 2,12 + 3,31	229 . 31 . 43,96	G.
	☽ N.L. M.	229 . 30	1 . 40,4	42,8	36,1	37,0	38,0	36,8	9,782	+ 5,69	229 . 31 . 44,22	G.
	☽ N.L. M..........	229 . 30	1 . 40,4	42,8	36,1	37,0	38,0	36,8	9,619	+ 9,10 - 3,31	229 . 31 . 44,32	G.
	☽ N.L. M.	229 . 30	1 . 40,4	42,8	36,1	37,0	38,0	36,8	9,450	+ 12,61 - 6,62	229 . 31 . 44,52	G.
	γ Leonis	226 . 40	2 . 19,1	22,0	16,8	17,9	16,2	15,3			226 . 42 . 17,90	G.
	ρ Leonis R. M......	333. 5	1 . 55,0	58,2	53,8	56,3	55,6	52,3	9,623	- 9,01	333. 7. 4,23	G.
	(*g*) *ρ* Leonis	237 . 10	3 . 20,5	22,9	17,4	17,0	17,2	18,3			237 . 13 . 18,90	G.
	∗ Æ. $10^h. 44^m. 25^s$.	183 . 30	3 . 47,1	49,3	43,8	45,9	44,0	44,0			183 . 33 . 45,72	G.
	(*h*) ∗ Æ. $10^h. 52^m. 10^s$.	183 . 20	2 . 61,8	64,2	60,0	60,3	58,1	58,2			183 . 23. 0,45	G.
April 26	(*i*) Polaris SP. R. M..	54 . 30	1. 5,8	7,5	2,2	3,6			11,680	- 33,87	54 . 30 . 30,86	G.
	Polaris SP.	155 . 45	4 . 48,2	51,7	47,0	47,5					155 . 49 . 48,40	G.
	η Urs. Maj. R. M..	13. 5	1. 6,0	8,1	4,1	4,3			12,215	- 45,02	13. 5 . 20,56	G.
	(*c*) *η* Ursæ Majoris....	197 . 10	4 . 61,6	61,2	57,8	60,0					197 . 15. 0,15	G.
	(*a*) Saturn S.L..........	256 . 45	4 . 29,2	29,5	27,6	24,9					256 . 49 . 27,63	G.
	υ Bootis	236 . 25	4 . 46,3	46,6	42,8	42,1					236 . 29 . 44,25	G.
April 27	(*j*) Venus S.L.	221 . 20	2 . 52,6	55,2	50,0	51,2				+ 0,44	221 . 22 . 52,57	G.
	ο Leonis M..........	236 . 45	0 . 28,8	28,6	24,0	24,2			14,032	- 1 . 22,90	236 . 44. 3,48	G.
	ψ Leonis	232 . 35	1. 9,3	11,2	7,0	7,2					232 . 36. 8,63	G.
	(*k*) *ε* Leonis.............	222 . 50	0 . 53,2	54,8	49,2	50,4				+ 0,27	222 . 50 . 52,15	G.
	μ Leonis.............	220 . 35	0 . 55,8	57,0	54,0	54,8					220 . 35 . 55,38	G.
	10 Sextantis	237 . 35	4 . 45,0	45,2	42,5	40,6					237 . 39 . 43,13	G.
	Regulus R. M.....	335 . 45	0 . 19,8	21,8	18,1	17,3			13,602	- 1 . 13,93	335 . 44. 5,30	G.
	Regulus	234 . 35	1 . 17,1	17,3	15,0	12,8					234 . 36 . 15,50	G.
	(*k*) A. S. C. 1215.	253 . 50	2 . 13,0	12,6	11,0	9,1				- 0,07	253 . 52 . 11,26	G.
	γ Leonis	226 . 40	2 . 18,4	19,2	17,0	15,9					226 . 42 . 17,53	G.
	ρ Leonis R. M.	333. 5	2 . 36,0	37,2	35,4	34,9			11,532	- 30,79	333. 7. 4,99	G.
	ρ Leonis	237 . 10	3 . 17,2	17,3	14,5	13,8					237 . 13 . 15,58	G.
	l Leonis	235 . 55	2 . 34,2	33,2	30,3	29,6					235 . 57 . 31,73	G.
	α Urs. Maj. R. M..	25 . 35	1. 6,0	8,0	5,1	4,8			12,000	- 40,53	25 . 35 . 25,40	G.
	(*c*) *α* Ursæ Majoris....	184 . 40	4 . 55,0	59,0	54,3	55,2					184 . 44 . 55,88	G.
	σ Leonis............	240 . 25	1 . 30,6	29,0	26,2	26,9					240 . 26 . 28,13	G.
	τ Leonis............	243 . 35	1 . 31,0	30,0	27,4	27,2					243 . 36 . 28,85	G.

(*a*) Very faint. (*b*) Good. (*c*) No correction for runs.

(*d*) The only star visible in the field, and of the 7th or 8th magnitude.

(*e*) Too faint to be certain.

(*f*) At the five wires. Faint at 2d wire.

(*g*) After this observation microscope B received a slight blow from the lamp: no sensible alteration of zenith point.

(*h*) So faint that the observer was not confident of the bisection.

(*i*) The wires of microscope E dragged; E and F are consequently omitted: the zenith point appears not to be sensibly changed.

(*j*) At fifth wire: very faint. Correction for curvature of path + 0″29, and for change of N. P. D. + 0″,15.

(*k*) At the 5th wire.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	28 . 52 . 15,69	29,772	56,5	56,6	31,57	0,74	11,492	14,98	66 . 39 . 39,82	Jupiter.
11,17	39 . 26 . 5,60	29,842	52,0	51,3	47,69				77 . 14 . 1,57	Regulus R.
	39 . 26 . 7,02								77 . 14 . 2,99	Regulus.
10,87	− 10 . 25 . 15,01	29,850	50,6	49,9	10,71				27 . 21 . 42,56	α Urs. Maj. R.
	− 10 . 25 . 14,19								27 . 21 . 43,38	α Ursæ Majoris.
	− 11 . 9 . 58,39				11,49				26 . 36 . 58,40	∗ Æ 11^{h}.17^{m}.15^{s}.
	37 . 32 . 49,49	29,858	49,0	47,8	44,91	3,64			75 . 20 . 39,04	Vesta.
10,48	− 5 . 43 . 46,79				5,87				32 . 3 . 15,62	δ Urs. Maj. R.
	− 5 . 43 . 46,76								32 . 3 . 15,65	δ Ursæ Majoris.
10,88	− 39 . 20 . 20,40	29,865	48,5	47,0	47,98				− 1 . 34 . 0,10	Polaris SP. R.
	− 39 . 20 . 19,56								− 1 . 33 . 59,26	Polaris SP.
	61 . 45 . 23,86	29,872	46,2	44,8	1 . 49,13	0,86	10,927	9,09	99 . 34 . 11,32	Saturn.
	41 . 19 . 35,14				51,71				79 . 7 . 35,13	υ Bootis.
	28 . 52 . 20,46	29,708	50,8	51,4	31,84	0,74	8,468	16,54	66 . 40 . 16,38	Jupiter.
	26 . 26 . 6,96	30,070	49,7	52,8	28,98	4,32	10,923	9,05	64 . 13 . 30,87	Venus.
	34 . 21 . 34,69	30,090	50,6	50,5					71 . 53 . 14,43	☽.
	34 . 21 . 33,50								71 . 53 . 13,24	☽.
	34 . 21 . 33,76				40,06	31 . 24,63		15 . 16,03	71 . 53 . 13,50	☽.
	34 . 21 . 33,86								71 . 53 . 13,60	☽.
	34 . 21 . 34,06								71 . 53 . 13,80	☽.
	31 . 32 . 7,44				35,95				69 . 19 . 51,67	γ Leonis.
11,57	42 . 3 . 6,23			50,3	52,84				79 . 51 . 7,35	ρ Leonis R.
	42 . 3 . 8,44								79 . 51 . 9,56	ρ Leonis.
	− 11 . 36 . 24,74				12,04				26 . 10 . 31,50	∗ Æ 10^{h}.44^{m}.25^{s}.
	− 11 . 47 . 10,01				12,23				25 . 59 . 46,04	∗ Æ 10^{h}.52^{m}.10^{s}.
9,63	− 39 . 20 . 20,40	29,750	44,8	43,9	48,10				− 1 . 34 . 0,22	Polaris SP. R.
	− 39 . 20 . 22,06								− 1 . 34 . 1,88	Polaris SP.
10,36	2 . 4 . 49,90	29,746	44,0	42,5	2,14				39 . 52 . 0,32	η Urs. Maj. R.
	2 . 4 . 49,69								39 . 52 . 0,11	η Ursæ Majoris.
	61 . 39 . 17,17		43,9	42,2	1 . 48,80	0,86	11,004	9,89	99 . 28 . 3,50	Saturn.
	41 . 19 . 33,79				51,77				79 . 7 . 33,84	υ Bootis.
	26 . 12 . 42,11	29,800	47,6	47,3	28,76	4,34	11,004	9,89	64 . 0 . 4,92	Venus.
	41 . 33 . 53,02	29,900	44,7	43,6	52,33				79 . 21 . 53,63	ο Leonis.
	37 . 25 . 58,17				45,18				75 . 13 . 51,63	ψ Leonis.
	27 . 40 . 41,69				30,97				65 . 28 . 20,94	ε Leonis.
	25 . 25 . 44,92				28,08				63 . 13 . 21,28	μ Leonis.
	42 . 29 . 32,67				54,06				80 . 17 . 35,01	10 Sextantis.
10,40	39 . 26 . 5,16	29,915	44,3	43,4	48,59				77 . 14 . 2,03	Regulus R.
	39 . 26 . 5,04								77 . 14 . 1,91	Regulus.
	58 . 42 . 0,80				1 . 36,93				96 . 30 . 46,01	A.S.C. 1215.
	31 . 32 . 7,07				36,27				69 . 19 . 51,62	γ Leonis.
10,29	42 . 3 . 5,47	29,922	43,8	42,7	53,37				79 . 51 . 7,12	ρ Leonis R.
	42 . 3 . 5,12								79 . 51 . 6,77	ρ Leonis.
	40 . 47 . 21,27				51,05				78 . 35 . 20,60	*l* Leonis.
10,64	− 10 . 25 . 14,94				10,89				27 . 21 . 42,45	α Urs. Maj. R.
	− 10 . 25 . 14,58								27 . 21 . 42,81	α Ursæ Majoris.
	45 . 16 . 17,67				59,71				83 . 4 . 25,66	σ Leonis.
	48 . 26 . 18,39				1 . 6,69				86 . 14 . 33,36	τ Leonis.

Coincidence of Micrometer Wire with fixed Wire = 10′,055. One revolution = 20″,843.
Correction for Runs = + 0″,2. Of the four Microscopes from April 26. = − 0″,8.
Adopted Zenith Point = 195° . 10′ . 10″,46.
Assumed Co-latitude = 37° . 47′ . 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
April 27	☽ N.L.	240.30	1.62,1	61,0	60,0	57,9				+ 8,50	240.32. 8,68	G.
	☽ N.L. M.	240.30	1.62,1	61,0	60,0	57,9			9,908	+ 3,06 + 4,25	240.32. 7,49	G.
	☽ N.L. M.	240.30	1.62,1	61,0	60,0	57,9			9,690	+ 7,60	240.32. 7,78	G.
	☽ N.L. M.	240.30	1.62,1	61,0	60,0	57,9			9,518	+ 11,20 − 4,25	240.32. 7,13	G.
	☽ N.L. M.	240.30	1.62,1	61,0	60,0	57,9			9,310	+ 15,52 − 8,50	240.32. 7,20	G.
	o Virginis	237.40	3.34,4	33,8	30,4	30,0					237.43.32,00	G.
	Spica R. M.	312.40	2. 6,4	7,7	5,3	3,8			13,581	− 1.13,50	312.40.52,23	G.
	(*a*) Spica	257.35	4.29,0	29,8	28,0	26,2					257.39.28,08	G.
	Saturn N.L.	256.45	2.38,5	39,5	37,2	35,9					256.47.37,68	G.
	v Bootis	236.25	4.45,3	46,6	43,3	41,7					236.29.44,03	G.
April 29	(*b*) Jupiter N.L.	224. 5	1.25,0	27,4	22,3	24,0	25,1	21,8			224. 6.24,22	G.
	Pollux R. M.	351.20	2.61,8	64,9	62,5	61,0	63,2	58,4	10,642	− 12,24	351.22.49,63	G.
	Pollux	218.55	2.30,8	33,3	27,9	29,2	31,0	28,0			218.57.29,95	G.
	o Leonis M.	236.45	0. 5,0	6,5	2,4	1,9	3,6	3,0	12,918	− 59,67	236.44. 4,06	G.
	ψ Leonis	232.35	1. 9,5	12,0	7,0	7,8	7,9	6,2			232.36. 8,37	G.
	ε Leonis	222.50	0.54,4	56,9	51,1	51,7	52,6	50,5			222.50.52,83	G.
	μ Leonis	220.35	0.55,8	58,1	54,9	54,7	54,5	52,2,			220.35.55,00	G.
	10 Sextantis	237.35	4.43,4	45,2	41,2	39,3	42,7	39,8			237.39.41,78	G.
	Regulus R. M.	335.45	0. 5,2	9,0	5,5	4,3	6,0	3,8	12,984	− 1. 1,06	335.44. 4,57	G.
	Regulus	234.35	1.16,7	16,8	14,0	11,0	14,0	14,0			234.36.14,38	G.
	A.S.C. 1215.	253.50	2.12,1	13,0	11,0	8,0	9,8	7,5			253.52.10,17	G.
	l Leonis	235.55	2.33,6	33,7	30,5	28,8	31,0	30,8			235.57.31,32	G.
	α Urs. Maj. R. M.	25.35	1. 6,0	10,7	5,9	5,5	6,8	3,2	12,023	− 41,02	25.35.25,30	G.
	(*c*) α Ursæ Majoris	184.40	4.55,2	60,3	54,3	55,8	55,6	54,3			184.44.55,92	G.
	Vesta	232.55	2.57,4	60,6	56,4	55,5	57,5	54,3			232.57.56,85	G.
	o Virginis	237.40	3.33,7	35,1	32,3	30,2	32,3	29,6			237.43.32,08	G.
	r Virginis	244.30	2.50,3	52,1	48,5	46,5	48,8	46,5			244.32.48,68	G.
	δ Corvi R. M.	307.25	1. 5,9	8,4	4,9	4,0	5,2	2,7	17,600	− 2.37,25	307.23.27,90	G.
	(*d*) δ Corvi	262.55	1.51,3	54,0	51,7	49,3	50,0	48,3			262.56.50,70	G.
	A.S.C. 1458. M.	244.35	2. 5,0	6,7	4,4	2,9	3,0	1,8	11,845	− 37,31	244.36.26,59	G.
	(*c*) A.S.C. 1459.	250.45	4.55,4	57,8	55,2	53,0	54,7	53,0			250.49.54,85	G.
	δ Virginis	243. 0	4.38,8	40,8	37,5	35,1	37,3	35,4			243. 4.37,33	G.
	(*e*) Polaris SP. R. M.	54.30	1.54,8	58,6	51,3	52,8	55,2	51,4	13,948 13.1.30	− 1.21,14 + 0,05	54.30.32,86	G.
	Polaris SP.	155.45	4.48,0	53,7	49,0	48,9	49,3	46,9	13.1.45	− 0,09	155.49.49,04	G.
	(*f*) ☽ N.L.	253.40	0.63,5	63,2	61,5	59,0	60,2	58,8		+ 9,12	253.41.10,12	G.
	☽ N.L. M.	253.40	6.63,5	63,2	61,5	59,0	60,2	58,8	9,856	+ 4,15 + 4,56	253.41. 9,71	G.
	☽ N.L. M.	253.40	6.63,5	63,2	61,5	59,0	60,2	58,8	9,677	+ 7,88	253.41. 8,88	G.
	☽ N.L. M.	253.40	0.63,5	63,2	61,5	59,0	60,2	58,8	9,433	+ 12,97 − 4,56	253.41. 9,41	G.
	☽ N.L. M.	253.40	0.63,5	63,2	61,5	59,0	60,2	58,8	9,173	+ 18,38 − 9,12	253.41.10,26	G.
	Saturn N.L.	256.40	4.37,5	39,2	36,4	33,8	34,8	34,7			256.44.35,92	G.
	ι Virginis	252.30	4.32,5	32,1	29,8	27,7	29,0	28,8			252.34.29,83	G.
April 30	☉ S.L. M.	232.45	2.53,2	57,2	51,7	49,6	53,3	49,3	15,118	− 1.45,53	232.46. 6,75	G.
	☉ N.L.	232.10	4.18,7	22,7	16,6	18,4	19,8	15,8			232.14.18,52	G.
	Vesta	233. 0	0.62,3	64,3	60,3	60,3	62,5	59,6			233. 1. 1,52	G.
	A.S.C. 1458. M.	244.35	2. 5,4	5,8	3,2	1,6	3,2	2,2	11,750	− 35,33	244.36.28,17	G.
	A.S.C. 1459.	250.45	4.58,0	59,0	57,1	53,0	55,6	54,9			250.49.56,10	G.

(*a*) Spectrum.

(*b*) Microscope E used again, appearing to act properly.

(*c*) No correction for runs.

(*d*) Dancing dreadfully.

(*e*) Not good.

(*f*) At the five wires. Very great jumping motion.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	45 . 21 . 58,22	29,925	42,5	41,2					82 . 44 . 56,77	☽.
	45 . 21 . 57,03								82 . 44 . 55,58	☽.
	45 . 21 . 57,32				1 . 0,11	40 . 54,56		15 . 44,72	82 . 44 . 55,87	☽.
	45 . 21 . 56,67								82 . 44 . 55,22	☽.
	45 . 21 . 56,74								82 . 44 . 55,29	☽.
	42 . 33 . 21,54				54,49				80 . 21 . 24,31	*o* Virginis.
10,16	62 . 29 . 18,23	29,934	41,8	41,1	1 . 53,65				100 . 18 . 20,16	Spica R.
	62 . 29 . 17,62								100 . 18 . 19,55	Spica.
	61 . 37 . 27,22			40,5	1 . 49,74	0,85	9,230	8,60	99 . 26 . 32,99	Saturn.
	41 . 19 . 33,57				52,29				79 . 7 . 34,14	*v* Bootis.
	28 . 56 . 14,88	29,788	43,0	42,8	32,58	0,73	8,654	14,60	66 . 44 . 9,61	Jupiter.
9,79	23 . 47 . 19,71	29,784	42,8		25,98				61 . 34 . 53,97	Pollux R.
	23 . 47 . 20,61								61 . 34 . 54,87	Pollux.
	41 . 33 . 54,72	29,772	42,2	41,5	52,34				79 . 21 . 55,34	*o* Leonis.
	37 . 25 . 59,03				45,19				75 . 13 . 52,50	ψ Leonis.
	27 . 40 . 43,49				30,98				65 . 28 . 22,75	ε Leonis.
	25 . 25 . 45,66				28,08				63 . 13 . 22,02	μ Leonis.
	42 . 29 . 32,44				54,06				80 . 17 . 34,78	10 Sextantis.
9,48	39 . 26 . 4,77	29,767	41,8	40,7	48,61				77 . 14 . 1,66	Regulus R.
	39 . 26 . 5,04								77 . 14 . 1,93	Regulus.
	58 . 42 . 0,83				1 . 36,99				96 . 30 . 46,10	A. S. C. 1215.
	40 . 47 . 21,98		41,0	39,4	51,14				78 . 35 . 21,40	*l* Leonis.
10,61	– 10 . 25 . 15,96				10,91				27 . 21 . 41,41	α Urs. Maj. R.
	– 10 . 25 . 13,42								27 . 21 . 43,95	α Ursæ Majoris.
	37 . 47 . 47,51		40,8	39,3	45,98	3,54			75 . 35 . 38,23	Vesta.
	42 . 33 . 22,74	29,760	39,8	38,5	54,50				80 . 21 . 25,52	*o* Virginis.
	49 . 22 . 39,34				1 . 9,16				87 . 10 . 56,78	*r* Virginis.
9,30	67 . 46 . 41,44				2 . 24,44				105 . 36 . 14,16	δ Corvi. R.
	67 . 46 . 41,36								105 . 36 . 14,08	δ Corvi.
	49 . 26 . 17,25		39,5	38,4	1 . 9,32				87 . 14 . 34,85	A. S. C. 1458.
	55 . 39 . 45,51				1 . 26,78				93 . 28 . 20,57	A. S. C. 1459.
	47 . 54 . 27,99				1 . 5,69				85 . 42 . 41,96	δ Virginis.
10,95	– 39 . 20 . 23,52				48,67				– 1 . 34 . 3,91	Polaris SP. R.
	– 39 . 20 . 20,30								– 1 . 34 . 0,69	Polaris SP.
	58 . 31 . 0,78	29,750	38,5	36,9					95 . 45 . 26,02	☽.
	58 . 31 . 0,37								95 . 45 . 25,61	☽.
	58 . 30 . 59,54				1 . 37,01	50 . 32,88		16 . 12,83	95 . 45 . 24,78	☽.
	58 . 31 . 0,07								95 . 45 . 25,31	☽.
	58 . 31 . 0,92								95 . 45 . 26,16	☽.
	61 . 34 . 26,58		38,0	36,4	1 . 49,77	0,85	9,210	8,80	99 . 23 . 32,58	Saturn.
	57 . 24 . 20,49				1 . 33,03				95 . 13 . 1,80	ι Virginis.
	37 . 35 . 57,41	29,700	44,3	45,0	45,03	5,16		15 . 53,10	75 . 7 . 52,46	☉.
	37 . 4 . 9,18				44,17	5,10			75 . 7 . 49,63	☉.
	37 . 50 . 52,18	29,742	42,0	40,6	45,90	3,52			75 . 38 . 42,84	Vesta.
	49 . 26 . 18,83		40,8	39,3	1 . 9,15				87 . 14 . 36,26	A. S. C. 1458.
	55 . 39 . 46,76				1 . 26,56				93 . 28 . 21,60	A. S. C. 1459.

Coincidence of Micrometer Wire with fixed Wire = $10^{r},055$. One revolution = 20″,843.
Correction for Runs = – 0″,8. From April 29. = – 1″,0.
Adopted Zenith Point = 195° . 10′ . 10″46. From April 29. = 195° . 10′ . 9″,34.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Change of Zenith Point upon using six Microscopes.
April 29. 21^{h}, Molyneux fast on Hardy 31^{s}.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
April 30	ε Virginis R. M. …	334.45	4.34,8	37,2	33,0	33,1	34,8	33,4	12,897	−59,23	334,48.35,00	G.
	ε Virginis…………	235.30	1.45,7	46,5	41,8	41,5	43,3	44,1			235.31.43,77	G.
	Polaris SP. R. M. .	54.30	1.28,8	31,0	24,2	26,0	28,8	27,0	12,744	−56,06	54.30.31,52	G.
	(a) Polaris SP………	155.45	4.45,0	48,0	44,3	43,4	44,0	43,0			155.49.44,47	G.
	Spica R. M………	312.40	2.10,4	12,2	10,0	8,0	9,3	8,1	13,853	−1.19,17	312.40.50,43	G.
	Spica ……………	257.35	4.27,3	29,0	26,8	25,3	25,5	25,2			257.39.26,37	G.
	η Urs. Maj. R. M. .	13. 5	1. 5,8	8,1	4,6	2,9	5,6	3,4	12,144	−43,55	13. 5.21,48	G.
	η Ursæ Majoris. …	197.10	4.58,2	60,4	56,2	57,0	57,0	55,8			197.14.57,27	G.
	Saturn S.L………	256.40	3.25,7	26,8	24,0	22,2	24,6	23,3			256.43.24,32	G.
	ι Virginis…………	252.30	4.32,7	32,3	30,2	28,2	30,3	29,0			252.34.30,30	G.
	(b) ☽ S.L. M. ………	260.40	4.30,7	31,0	28,8	26,9	28,7	27,2	1,420	+2.59,98 +8,78	260.47.37,49	G.
	☽ S.L. M. ………	260.40	4.30,7	31,0	28,8	26,9	28,7	27,2	1,193	+3. 4,70 +4,39	260.47.37,82	G.
	☽ N.L……………	260.10	4.35,2	35,9	34,0	31,8	33,7	32,4			260.14.33,68	G.
	☽ N.L. M………	260.10	4.35,2	35,9	34,0	31,8	33,7	32,4	9,883	+3,58 −4,39	260.14.32,87	G.
	☽ N.L. M. ………	260.10	4.35,2	35,9	34,0	31,8	33,7	32,4	9,720	+6,98 −8,78	260.14.31,88	G.
May 1	Arcturus R. M.….	343. 0	0.25,9	29,0	25,5	25,6	26,1	24,8	10,908	−17,77	343. 0. 8,36	G.
	Arcturus…………	227.20	0.10,5	13,2	9,0	9,4	6,2	8,8			227.20. 9,52	G.
	(c) ☽ S.L. ……………	266.40	3.52,8	55,5	52,0	50,8	52,4	49,2		−3,88	266.43.48,10	G.
May 2	☉ S.L. M. ………	232.10	2. 5,1	7,3	4,2	4,1	8,5	1,2	16,027	−2. 4,48	232.10. 0,52	G.
	☉ N.L. …………	231.35	3.13,4	17,2	11,9	12,7	18,3	11,0			231.38.13,98	G.
	Venus S.L. ………	221. 0	0.12,8	16,5	11,0	12,0	11,1	9,8			221. 0.12,20	G.
	Spica R. M………	312.40	2. 5,8	7,2	4,2	2,8	8,5	3,0	13,570	−1.13,26	312.40.51,92	G.
	Spica ……………	257.35	4.29,0	30,6	26,3	26,3	27,8	26,4			257.39.27,58	G.
	η Urs. Maj. R. M. .	13. 5	1. 5,8	8,9	3,7	3,6	6,0	2,1	12,171	−44,11	13. 5.20,87	G.
	(d) η Ursæ Majoris …	197.10	4.58,9	61,3	55,3	58,0	54,2	55,9			197.14.57,27	G.
	Saturn S.L………	256.40	0.30,0	31,8	28,2	27,9	34,4	29,0			256.40.30,20	G.
	(e) Arcturus R. M. …	343. 0	0.23,3	26,2	22,0	22,2	21,3	21,0	10,731	−14,10	343. 0. 8,55	G.
	(f) Arcturus …………	227.20	0.10,3	12,2	7,9	8,8	8,0	7,9		+0,22	227.20. 9,40	G.
	(g) θ Bootis …………	194.45	1.26,5	27,7	23,0	23,5	29,1	24,2		+0,20	194.46.25,82	C.
	δ Libræ…………	255.10	3.18,9	19,3	16,8	14,6	20,8	16,0			255.13.17,62	C.
	α Cor. Bor. R. M…	350.15	0.12,6	14,8	12,5	12,9	9,4	10,8	14,010	−1.22,43	350.13.49,74	C.
	(f) α Cor. Bor. ………	220. 5	1.30,0	27,2	26,1	27,8	26,7	26,6		+0,31	220. 6.27,66	C.
	δ Scorpii …………	269.25	3.36,0	38,6	34,7	33,0	41,2	34,1			269·28.36,15	G.
	(h) ☽ S.L. ……………	271.30	0. 9,4	10,3	7,3	6,0	3,3	5,4		+5,90	271.30.12,85	G.
	☽ S.L. M.. ………	271.30	0. 9,4	10,3	7,3	6,0	3,3	5,4	9,864	+3,98 +2,95	271.30.13,88	G.
	☽ S.L. M…………	271.30	0. 9,4	10,3	7,3	6,0	3,3	5,4	9,710	+7,18	271.30.14,13	G.
	☽ S.L. M. ………	271.30	0. 9,4	10,3	7,3	6,0	3,3	5,4	9,564	+10,24 −2,95	271.30.14,24	G.
	☽ S.L. M. ………	271.30	0. 9,4	10,3	7,3	6,0	3,3	5,4	9,434	+12,95 −5,90	271.30.14,00	G.
May 3	(i) ☉ N.L. M. ………	231.20	2. 6,2	8,7	3,3	3,2			14,402	−1.30,60	231.20.34,65	G.
	☉ S..L……………	231.50	2.16,3	21,0	14,1	16,8					231.52.16,95	G.
May 4	Vesta ……………	233.15	0.33,1	35,0	28,0	31,4					233.15.31,85	G.
	(j) δ Corvi R. M. ……	307.20	4.39,8	42,2	37,3	38,0			13,611	−1.14,12	307.23.24,98	G.
	δ Corvi……………	262.55	1.57,0	59,4	55,3	55,5					262.56.56,70	G.

(a) Not good.

(b) Observation of the S.L. not satisfactory: that of N.L. very good. The S.L. not fully illumined, and the correction applied for defect of illumination $= +1'',10$.

(c) Very faint and misty. At the 4th wire.

(d) No correction for runs.

(e) Not good.

(f) At the 5th wire. (g) At the 4th wire.

(h) At the five wires; uneven.

(i) Microscope E failing again, was taken down, and sent to be rectified. (j) Faint.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
9,39	40 . 21 . 34,34	29,734	39,8	38,5	50,41				78 . 9 . 33,03	ε Virginis R.
	40 . 21 . 34,43								78 . 9 . 33,12	ε Virginis.
8,00	− 39 . 20 . 22,18				48,62				− 1 . 34 . 2,51	Polaris SP. R.
	− 39 . 20 . 24,87								− 1 . 34 . 5,21	Polaris SP.
8,40	62 . 29 . 18,91		39,5		1 . 53,49				100 . 18 . 20,68	Spica R.
	62 . 29 . 17,03								100 . 18 . 18,80	Spica.
9,38	2 . 4 . 47,86				2,16				39 . 51 . 58,30	η Urs. Maj. R.
	2 . 4 . 47,93								39 . 51 . 58,37	η Ursæ Majoris.
	61 . 33 . 14,98		38,9	36,8	1 . 49,52	0,85	10,883	8,63	99 . 22 . 3,30	Saturn.
	57 . 24 . 20,96				1 . 32,90				95 . 13 . 2,14	ι Virginis.
	65 . 37 . 28,15	29,730	38,0	36,3	2 . 10,76	54 . 36,32			102 . 15 . 48,59	☽.
	65 . 37 . 28,48								102 . 15 . 48,92	☽.
	65 . 4 . 24,34							16 . 23,38	102 . 15 . 42,06	☽.
	65 . 4 . 23,53				2 . 7,61	54 . 21,55			102 . 15 . 41,25	☽.
	65 . 4 . 22,54					-			102 . 15 . 40,26	☽.
8,94	32 . 10 . 0,98	29,892	43,2	42,6	37,20				69 . 57 . 46,46	Arcturus R.
	32 . 10 . 0,18								69 . 57 . 45,66	Arcturus.
	71 . 33 . 38,76	29,890	42,5	42,2	2 . 55,80	57 . 16,23		16 . 29,90	108 . 9 . 56,71	☽.
	36 . 59 . 51,18	29,944	51,3	51,6	43,82	5,09		15 . 52,70	74 . 31 . 45,49	⊙.
	36 . 28 . 4,64				42,99	5,02			74 . 31 . 43,59	⊙.
	25 . 50 . 2,86	29,970	50,5	49,9	28,29	4,49	11,122	11,12	63 . 37 . 23,82	Venus.
9,75	62 . 29 . 17,42	30,082	43,3	42,9	1 . 53,78				100 . 18 . 19,48	Spica R.
	62 . 29 . 18,24								100 . 18 . 20,30	Spica.
9,07	2 . 4 . 48,47				2,16				39 . 51 . 58,91	η Urs. Maj. R.
	2 . 4 . 47,93								39 . 51 . 58,37	η Ursæ Majoris.
	61 . 30 . 20,86		43,1	42,5	1 . 49,29	0,85	10,917	8,98	99 . 19 . 8,60	Saturn.
8,98	32 . 10 . 0,79				37,44				69 . 57 . 46,51	Arcturus R.
	32 . 10 . 0,06								69 . 57 . 45,78	Arcturus.
	− 0 . 23 . 43,52				0,41				37 . 23 . 24,35	θ Bootis.
	60 . 3 . 8,28				1 . 43,02				97 . 51 . 59,58	δ Libræ.
8,70	24 . 56 . 19,60	30,013	42,7	41,9	27,66				62 . 43 . 55,54	α Cor. Bor. R
	24 . 56 . 18,32								62 . 43 . 54,26	α Cor. Bor.
	74 . 18 . 26,81				3 . 28,73				112 . 9 . 3,82	δ Scorpii.
	76 . 20 . 3,51	30,024	42,2	41,2					112 . 55 . 53,19	☽.
	76 . 20 . 4,54								112 . 55 . 54,22	☽.
	76 . 20 . 4,79				4 . 0,54	58 . 47,36		16 . 31,78	112 . 55 . 54,47	☽.
	76 . 20 . 4,90								112 . 55 . 54,58	☽.
	76 . 20 . 4,66								112 . 55 . 54,34	☽.
	36 . 10 . 23,68	29,948	48,8	48,6	42,79	4,99		15 . 52,50	74 . 14 . 2,26	⊙.
	36 . 42 . 5,98				43,62	5,05			74 . 14 . 0,33	⊙.
	38 . 5 . 20,88	29,710	47,2	46,2	45,72	3,46			75 . 53 . 11,42	Vesta.
10,84	67 . 46 . 45,99		46,5	45,7	2 . 22,05				105 . 36 . 16,32	δ Corvi R.
	67 . 46 . 45,73								105 . 36 . 16,06	δ Corvi.

Coincidence of Micrometer Wire with fixed Wire $= 10^r{,}055$. One revolution $= 20''{,}843$.
Correction for Runs $= -1''{,}0$.
Adopted Zenith Point $= 195^\circ . 10' . 9''{,}34$. From May 3. $= 195^\circ . 10' . 10''{,}97$.
Assumed Co-latitude $= 37^\circ . 47' . 8''{,}28$.
Change of Zenith Point on recurring to four Microscopes.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
May 4	ε Bootis R. M.	350 . 40	4 . 30,2	34,3	29,7	29,6			12,123	− 43,11	350 . 43 . 47,62	G.
	ε Bootis	219 . 35	1 . 36,0	38,4	31,2	34,3					219 . 36 . 34,90	G.
	(*a*) α^2 Libræ R. M.	307 . 35	3 . 27,8	30,6	24,4	26,4			10,914	− 17,90 + 0,16	307 . 38 . 9,39	G.
	(*b*) α^2 Libræ	262 . 40	2 . 13,3	14,2	11,6	9,9				− 0,37	262 . 42 . 11,78	G.
May 6	(*c*) ⊙ N.L	230 . 25	4 . 4,8	8,0	2,4	3,4				+ 1,03	230 . 29 . 5,48	G.
	(*d*) Vesta	233 . 20	3 . 43,9	41,2	39,2	40,6	40,1	41,4		+ 0,05	233 . 23 . 41,05	G.
	r Virginis	244 . 30	2 . 35,8	31,9	30,2	31,6	30,0	34,3			244 . 32 . 32,25	G.
	(*e*) δ Corvi R. M.	307 . 20	4 . 9,4	7,2	6,5	5,1	5,0	5,8	13,028	− 1 . 2,06	307 . 23 . 4,37	G.
	δ Corvi	262 . 55	1 . 36,3	33,9	33,7	32,8	31,5	35,2			262 . 56 . 33,87	G.
	k^1 Virginis M.	250 . 15	1 . 21,4	17,6	16,5	17,5	15,5	19,8	8,075	+ 41,19	250 . 16 . 59,22	G.
	ε Virginis M.	235 . 30	2 . 53,2	49,5	47,5	47,9	48,0	51,0	14,005	− 1 . 23,16	235 . 31 . 26,31	G.
	(*f*) Polaris SP. R. M.	54 . 30	0 . 61,5	60,8	56,9	58,8	59,2	58,5	12,170	− 44,17	54 . 30 . 15,10	G.
	Polaris SP.	155 . 45	4 . 31,1	30,7	27,3	30,8	28,5	30,8			155 . 49 . 29,78	G.
	Spica R. M.	312 . 40	2 . 11,0	7,4	8,1	7,9	6,5	8,9	14,515	− 1 . 33,04	312 . 40 . 35,23	G.
	Spica	257 . 35	4 . 13,2	10,2	10,7	10,0	7,5	11,4			257 . 39 . 10,43	G.
	η Urs. Maj. R. M.	13 . 5	1 . 41,8	41,2	38,8	40,4	40,0	40,0	14,579	− 1 . 34,38	13 . 5 . 5,95	G.
	η Ursæ Majoris	197 . 10	4 . 41,5	40,8	38,0	40,8	37,3	40,0			197 . 14 . 39,65	G.
	Saturn S.L.	256 . 30	4 . 31,8	28,8	28,0	28,4	26,3	30,3			256 . 34 . 28,85	G.
	(*g*) Arcturus R. M.	342 . 55	4 . 41,2	40,3	39,8	40,0	39,2	39,5	9,350	+ 14,61	342 . 59 . 54,53	C.
	Arcturus	227 . 15	4 . 52,0	51,6	50,1	51,0	51,7	50,9			227 . 19 . 51,13	C.
	Polaris	158 . 55	2 . 30,9	31,5	30,1	33,0	30,5	31,3			158 . 57 . 31,17	G.
May 7	⊙ N.L. M.	230 . 10	3 . 48,0	48,2	44,3	47,1	46,6	45,8	14,595	− 1 . 34,70	230 . 12 . 11,90	G.
	⊙ S.L.	230 . 40	3 . 56,0	56,6	54,0	55,1	54,0	53,6			230 . 43 . 54,82	G.
	Venus S.L.	220 . 50	2 . 61,0	59,3	60,0	59,0	56,7	58,8			220 . 52 . 59,08	G.
May 9	⊙ N.L. M.	229 . 40	2 . 33,8	34,0	30,0	31,4	32,2	32,0	17,803	− 2 . 41,57	229 . 39 . 50,61	G.
	⊙ S.L.	230 . 10	1 . 31,1	29,7	27,0	30,8	28,3	29,5			230 . 11 . 29,37	G.
	Venus S.L.	220 . 50	4 . 28,0	27,6	25,7	28,4	26,0	25,3			220 . 54 . 26,77	G.
	(*h*) α Urs. Maj. R. M.	25 . 35	1 . 26,3	25,4	23,0	26,3	21,3	25,0	13,630	− 1 . 14,60	25 . 35 . 9,93	G.
	α Ursæ Majoris	184 . 40	4 . 38,2	38,0	35,8	36,9	34,1	37,0			184 . 44 . 36,58	G.
	Vesta	233 . 35	2 . 58,4	56,0	55,2	56,0	53,0	55,1			233 . 37 . 55,57	G.
	γ Urs. Maj. R. M.	17 . 30	3 . 56,5	57,0	55,2	54,5	52,0	53,8	11,220	− 24,36	17 . 33 . 30,41	G.
	γ Ursæ Majoris	192 . 45	1 . 15,3	14,6	12,5	16,2	11,0	14,6			192 . 46 . 14,02	G.
	δ Corvi R. M.	307 . 20	4 . 9,3	8,0	8,4	6,9	5,5	6,2	12,809	− 57,49	307 . 23 . 9,83	G.
	δ Corvi	262 . 55	1 . 37,4	35,0	35,8	35,8	33,0	36,0			262 . 56 . 35,47	G.
	Polaris SP. R. M.	54 . 30	0 . 52,9	50,9	47,0	50,5	48,5	50,2	11,636	− 33,03	54 . 30 . 16,95	G.
	Polaris SP.	155 . 45	4 . 32,0	30,1	29,0	30,8	27,2	29,7			155 . 49 . 29,73	G.
	Saturn N.L.	256 . 30	0 . 8,3	4,4	5,4	5,1	1,8	5,8			256 . 30 . 5,13	G.
	Arcturus R. M.	343 . 0	0 . 21,3	18,8	19,3	20,0	17,2	20,0	11,279	− 25,60	342 . 59 . 53,83	G.
	(*i*) Arcturus	227 . 15	4 . 54,3	52,1	51,2	53,0	50,5	52,9			227 . 19 . 52,33	G.
May 10	⊙ S.L. M.	229 . 55	4 . 9,2	6,2	5,2	7,0	5,0	4,8	19,723	− 3 . 21,60	229 . 55 . 44,57	G.
	⊙ N.L.	229 . 20	4 . 7,6	5,0	3,4	4,4	2,7	3,2			229 . 24 . 4,32	G.
	(*j*) Mercury center	225 . 35	3 . 21,2	18,0	15,8	17,8	16,9	16,9			225 . 38 . 17,72	G.
	Venus S.L.	220 . 55	1 . 7,2	6,4	4,4	8,3	3,7	4,3			220 . 56 . 5,70	G.
	Jupiter S.L.	224 . 15	0 . 36,0	33,9	30,0	34,2	32,3	33,5			224 . 15 . 33,30	G.
	(*k*) Regulus R. M.	335 . 45	0 . 36,3	34,3	31,0	36,1	32,6	34,7	15,210	− 1 . 47,53	335 . 43 . 46,62	G.
	Regulus	234 . 35	0 . 62,8	58,2	57,4	58,0	57,2	58,9			234 . 35 . 58,73	G.
	α Urs. Maj. R. M.	25 . 35	2 . 29,4	27,0	23,8	28,0	23,2	26,4	16,590	− 2 . 16,30	25 . 35 . 9,97	G.
	α Ursæ Majoris	184 . 40	4 . 38,5	36,1	34,1	36,0	34,0	36,3			184 . 44 . 35,75	G.
	Vesta	233 . 40	3 . 6,4	3,0	2,0	3,2	1,0	2,6			233 . 43 . 2,98	G.

(*a*) At the 5th wire. (*b*) At the comb.

(*c*) At the comb: correction for change of declination = + 0″,63, for curvature of path = + 0″,40.

(*d*) At the 5th wire: correction for change of declination = − 0″,10: for curvature of path = + 0″,15. Microscope E put up again before the observation of Vesta.

(*e*) Blur.

(*f*) Not good.

(*g*) Barometer reading most probably wrong.

(*h*) Very good.

(*i*) No correction for runs.

(*j*) Difficult to observe.

(*k*) Beautiful.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
11,26	24 . 26 . 23,35	29,730	45,6	45,0	26,61				62 . 13 . 58,24	ε Bootis R.
	24 , 26 . 23,93								62 . 13 . 58,82	ε Bootis.
10,80	67 . 32 . 1,58				2 . 20,65				105 . 21 . 30,51	α^2 Libræ R.
	67 . 32 . 0,81								105 . 21 . 29,74	α^2 Libræ.
	35 . 18 . 54,51	30,124	49,2	53,7	41,29	4,88		15 . 51,80	73 . 22 . 31,00	⊙.
	38 . 13 . 48,60	30,250	47,0	45,3	46,87	3,43			76 . 1 . 40,32	Vesta.
	49 . 22 . 39,80				1 . 9,30				87 . 10 . 57,38	*r* Virginis.
49,12	67 . 46 . 48,08		45,8	43,7	2 . 25,22				105 . 36 . 21,58	δ Corvi R.
	67 . 46 . 41,42								105 . 36 . 14,92	δ Corvi.
	55 . 7 . 6,77	30,256	44,7	42,3	1 . 25,74				92 . 55 . 40,79	k^1 Virginis.
	40 . 21 . 33,86				50,88				78 . 9 . 33,02	ε Virginis.
52,44	− 39 . 20 . 22,65				49,07				− 1 . 34 . 3,44	Polaris SP. R.
	− 39 . 20 . 22,67								− 1 . 34 . 3,46	Polaris SP.
47,83	62 . 29 . 17,22				1 . 54,55				100 . 18 . 20,05	Spica R.
	62 . 29 . 17,98								100 . 18 . 20,81	Spica.
52,80	2 . 4 . 46,50		44,0	42,1	2,18				39 . 51 . 56,96	η Urs. Maj. R.
	2 . 4 . 47,20								39 . 51 . 57,66	η Ursæ Majoris.
	61 . 24 . 36,40	30,250	43,3	41,3	1 . 49,72	0,85	10,953	9,40	99 . 13 . 24,15	Saturn.
52,83	32 . 9 . 57,92	30,208			37,69				69 . 57 . 43,89	Arcturus R.
	32 . 9 . 58,68								69 . 57 . 44,65	Arcturus.
	− 36 . 12 . 21,28	30,280	51,0	52,0	43,02				1 . 34 . 3,98	Polaris.
	35 . 2 . 19,45	30,280	54,1	54,5	41,00	4,85		15 . 51,50	73 . 5 . 55,38	⊙.
	35 . 34 . 2,37				41,81	4,91			73 . 5 . 56,05	⊙.
	25 . 43 . 6,63	30,250	50,0	49,2	28,44	4,69	11,122	11,16	63 . 30 . 27,50	Venus.
	34 . 29 . 58,16	30,214	50,0	49,7	40,49	4,78		15 . 51,10	72 . 33 . 33,25	⊙.
	35 . 1 . 36,92				41,29	4,84			72 . 33 . 30,55	⊙.
	25 . 44 . 34,32	30,186	51,0	51,1	28,31	4,80	11,150	11,46	63 . 31 . 54,65	Venus.
53,26	− 10 . 25 . 17,48	30,170	46,4	45,1	10,93				27 . 21 . 39,87	α Urs. Maj. R.
	− 10 . 25 . 15,87								27 . 21 . 41,48	α Ursæ Majoris.
	38 . 28 . 3,12		45,4	43,8	47,29	3,40			76 . 15 . 55,29	Vesta.
52,22	− 2 . 23 . 37,96				2,49				35 . 23 . 27,83	γ Urs. Maj. R.
	− 2 . 23 . 38,43								35 . 23 . 27,36	γ Ursæ Majoris.
52,65	67 . 46 . 42,62		44,6	43,4	2 . 24,93				105 . 36 . 15,83	δ Corvi R.
	67 . 46 . 43,02								105 . 36 . 16,23	δ Corvi.
53,34	− 39 . 20 . 24,50	30,168	45,0	42,4	48,92				− 1 . 34 . 5,14	Polaris SP. R.
	− 39 . 20 . 22,72								− 1 . 34 . 3,36	Polaris SP.
	61 . 20 . 12,68	30,162	44,2	43,1	1 . 48,67	0,85	9,215	8,72	99 . 9 . 17,50	Saturn.
53,08	32 . 9 . 58,62				37,49				69 . 57 . 44,39	Arcturus R.
	32 . 9 . 59,88								69 . 57 . 45,65	Arcturus.
	34 . 45 . 52,12	30,180	53,2	54,7	40,44	4,81		15 . 50,90	72 . 17 . 45,13	⊙.
	34 . 14 . 11,87				39,65	4,75			72 . 17 . 45,95	⊙.
	30 . 28 . 25,27	30,172	52,8	55,0	34,26	3,50			68 . 16 . 4,31	Mercury.
	25 . 46 . 13,25	30,165	55,1	56,0	28,04	4,85	11,140	11,35	63 . 33 . 33,37	Venus.
	29 . 5 . 40,85	30,164	55,2	55,6	32,35	0,72	11,455	14,63	66 . 53 . 6,13	Jupiter.
52,68	39 . 26 . 5,83	30,160	54,2	53,7	47,96				77 . 14 . 2,07	Regulus R.
	39 . 26 . 6,28								77 . 14 . 2,52	Regulus.
52,86	− 10 . 25 . 17,52				10,73				27 . 21 . 40,03	α Urs. Maj. R.
	− 10 . 25 . 16,70								27 . 21 . 40,85	α Ursæ Majoris.
	38 . 33 . 10,53	30,189	51,3	49,9	46,88	3,38			76 . 21 . 2,31	Vesta.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},055. From May 6. = 10^{r},051. One revolution = 20″,843.
Correction for Runs = − 1″,0. From Vesta May 6. − 0″,5.
Adopted Zenith Point = 195° . 10′ . 10″,97. From Vesta May 6. = 195°. 9′. 52″,45.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Change of Zenith Point on putting up Microscope E, and adjusting the position of Microscope A.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
May 10	γ Urs. Maj. R. M..	17 . 30	4 . 27,2	25,4	21,7	24, 7	21,8	24,0	12,552	− 52,13	17 . 33 . 31,94	G.
	γ Ursæ Majoris....	192 . 45	1 . 17,0	13,0	12,3	15,5	11,2	14,7			192 . 46 . 13,93	G.
	k^1 Virginis..........	250 . 15	1 . 64,2	61,4	60,6	61,0	58,9	61,0			250 . 17 . 1,15	G.
	Polaris SP. R. M. .	54 . 30	1 . 9,7	6,3	2,9	7,0	4,0	6,7	12,393	− 48,81	54 . 30 . 17,27	G.
	Polaris SP..........	155 . 45	4 . 29,8	27,0	26,0	28,4	25,3	28,2			155 . 49 . 27,38	G.
	ε Cassiop. SP. R. M.	80 . 5	0 . 65,0	62,0	59,4	63,7	59,7	63,0	17,284	− 2 . 30,76	80 . 3 . 31,36	G.
	ε Cassiopeiæ SP....	130 . 15	1 . 20,2	16,0	13,9	17,8	12,3	18,0			130 . 16 . 16,35	G.
	Saturn S.L..........	256 . 25	3 . 65,3	60,6	62,2	61,0	58,9	60,8			256 . 29 . 1,40	G.
	Arcturus R. M.....	343 . 0	0 . 35,3	32,5	31,7	34,8	32,2	32,8	11,972	− 40,04	342 . 59 . 53,16	G.
	(*a*) Arcturus............	227 . 15	4 . 54,4	50,3	50,0	51,6	49,3	51,0			227 . 19 . 51,10	G.
May 11	(*b*) ⊙ N.L. M.	229 . 10	0 . 34,9	34,4	30,8	34,0	34,7	33,2	15,655	− 1 . 56,81	229 . 8 . 36,84	G.
	⊙ S.L.	229 . 40	0 . 17,1	16,0	13,0	16,3	14,7	13,3			229 . 40 . 15,07	G.
	Venus S.L.	220 . 55	3 . 20,7	20,5	16,8	20,4	17,7	16,9			220 . 58 . 18,78	G.
	(*c*) Jupiter S.L..........	224 . 15	1 . 27,0	25,7	21,0	25,2	24,2	24,2			224 . 16 . 24,53	G.
	Vesta................	233 . 45	3 . 26,8	25,3	20,8	25,0	22,8	24,0			233 . 48 . 24,07	G.
	Polaris SP. R. M. .	54 . 30	1 . 24,9	20,9	17,9	22,0	19,4	21,9	13,109	− 1 . 3,74	54 . 30 . 17,41	G.
	Polaris SP...........	155 . 45	4 . 28,5	26,1	23,3	25,9	24,0	25,3			155 . 49 . 25,45	G.
	η Urs. Maj. R. M...	13 . 5	1 . 27,0	24,1	21,6	25,8	23,2	25,0	13,837	− 1 . 18,92	13 . 5 . 5,51	G.
	η Ursæ Majoris....	197 . 10	4 . 42,1	39,3	35,2	39,8	37,3	37,8			197 . 14 . 38,50	G.
	Saturn N.L..........	256 . 25	2 . 32,8	28,9	27,2	29,9	28,2	29,6			256 . 27 . 29,40	G.
	(*d*) Arcturus R. M. ...	343 . 0	0 . 41,2	39,2	36,0	41,0	39,3	39,7	12,330	− 47,51	342 . 59 . 51,87	G.
	Arcturus............	227 . 15	4 . 55,1	52,8	49,8	53,2	52,0	53,0			227 . 19 . 52,57	G.
	θ Bootis..............	194 . 45	1 . 8,3	4,2	3,1	4,4	3,0	4,8			194 . 46 . 4,62	G.
	μ Virginis R. M....	318 . 0	3 . 20,8	17,2	15,5	17,8	15,2	17,1	14,045	− 1 . 23,25	318 . 1 . 53,97	G.
	μ Virginis............	252 . 15	2 . 56,2	53,2	49,9	52,3	50,6	52,5			252 . 17 . 52,40	G.
	α^2 Libræ R. M.....	307 . 35	2 . 45,6	44,0	40,0	43,9	41,2	42,3	9,697	+ 7,37	307 . 37 . 50,15	G.
	α^2 Libræ............	262 . 40	1 . 57,8	55,3	54,0	55,9	54,2	55,8			262 . 41 . 55,47	G.
	δ Libræ..............	255 . 10	3 . 4,7	1,4	0,6	2,0	1,0	1,3			255 . 13 . 1,78	G.
	Polaris..............	158 . 55	2 . 33,2	31,0	30,0	33,3	29,8	32,8			158 . 57 . 31,63	G.
May 12	(*e*) ⊙ S.L. M.	229 . 25	2 . 16,8	15,0	10,9	14,8	12,6	13,2	16,171	− 2 . 7,56	229 . 25 . 6,29	G.
	⊙ N.L..............	228 . 50	3 . 25,6	26,0	21,0	25,1	23,8	24,2			228 . 53 . 24,23	G.
	(*f*) Mercury center	224 . 35	0 . 7,2	6,0	1,7	6,0	5,2	3,9			224 . 35 . 4,98	G.
	Capella R. M.......	8 . 45	0 . 16,5	13,8	11,5	16,0	11,3	15,2	6,220	+ 1 . 19,85	8 . 46 . 33,90	G.
	Capella..............	201 . 30	3 . 9,8	8,2	5,4	7,2	5,4	5,9			201 . 33 . 6,93	G.
	Venus S.L...........	221 . 0	1 . 9,4	8,0	4,2	9,6	6,0	6,0			221 . 1 . 7,18	G.
	Jupiter S.L.	224 . 15	2 . 28,9	26,8	20,2	26,6	24,2	26,0			224 . 17 . 25,42	G.
	Vesta	233 . 50	3 . 55,4	53,2	48,3	52,0	51,0	51,9			233 . 53 . 51,90	G.
	Polaris SP. R. M. .	54 . 30	1 . 44,2	41,7	36,0	43,0	40,0	41,8	14,047	− 1 . 23,30	54 . 30 . 17,78	G.
	Polaris SP...........	155 . 45	4 . 29,8	26,6	23,3	27,5	25,2	26,9			155 . 49 . 26,48	G.
	Spica R. M..........	312 . 40	2 . 30,5	26,0	23,0	28,0	24,8	27,3	15,620	− 1 . 56,08	312 . 40 . 30,49	G.
	Spica................	257 . 35	4 . 17,0	13,0	12,2	14,3	10,9	14,0			257 . 39 . 13,50	G.
	ε Cassiop. SP. R. M.	80 . 5	0 . 37,5	34,9	29,8	36,9	33,5	35,8	15,803	− 1 . 59,89	80 . 3 . 34,83	G.
	ε Cassiopeiæ SP....	130 . 15	1 . 12,1	9,0	6,2	10,8	6,5	10,0			130 . 16 . 9,08	G.
	Saturn S.L..........	256 . 25	1 . 32,6	28,7	26,8	29,6	27,8	29,8			256 . 26 . 29,20	G.
	Arcturus R. M.....	343 . 0	0 . 47,6	45,3	42,2	47,0	45,5	45,1	12,647	− 54,12	342 . 59 . 51,31	G.
	(*a*) Arcturus	227 . 15	4 . 54,9	51,0	47,2	52,2	51,3	52,0			227 . 19 . 51,43	G.
	Polaris	158 . 55	2 . 33,8	32,2	29,7	34,2	30,0	32,9			158 . 57 . 32,08	G.
May 13	⊙ N.L. M..........	228 . 35	2 . 39,0	38,3	33,5	36,0	36,0	35,2	7,123	+ 1 . 1,04	228 . 38 . 37,32	G.
	⊙ S.L.	229 . 10	0 . 19,1	17,9	13,7	16,9	16,2	15,1			229 . 10 . 16,48	G.
	Mercury center	224 . 5	2 . 26,3	26,8	20,0	25,8	23,5	22,8			224 . 7 . 24,17	G.
	(*g*) Capella R. M.......	8 . 45	2 . 9,4	10,2	5,2	11,1	6,8	7,8	11,435	− 28,84	8 . 46 . 39,54	G.
	(*h*) Capella...............	201 . 30	3 . 14,3	10,3	8,9	9,7	8,0	9,2		+ 0,15	201 . 33 . 10,17	G.

(*a*) No correction for runs.

(*b*) Very faint.

(*c*) The micrometer for the opposite limb not being read, the semi-diameter is taken a mean between those of the preceding and succeeding observations.

(*d*) Beautiful.

(*e*) The observations from this time with a power of 140.

(*f*) The microscope readings set down have been altered 1′.

(*g*) Not good.

(*h*) At the 4th wire.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
52,94	−2 . 23 . 39,49	30,189	51,3	49,9	2,46				35 . 23 . 26,33	γ Ursæ Maj. R.
	−2 . 23 . 38,52								35 . 23 . 27,30	γ Ursæ Majoris.
	55 . 7 . 8,70		50,5	48,3	1 . 24,50				92 . 55 . 41,48	k^1 Virginis.
52,33	−39 . 20 . 24,82				48,36				−1 . 34 . 4,90	Polaris SP. R.
	−39 . 20 . 25,07								−1 . 34 . 5,15	Polaris SP.
53,86	−64 . 53 . 38,91	30,180	48,2	45,3	2 . 6,08				−27 . 8 . 36,71	ε Cassiop. SP. R.
	−64 . 53 . 36,10								−27 . 8 . 33,90	ε Cassiopeiæ SP.
	61 . 19 . 8,95			44,1	1 . 48,41	0,85	10,920	9,06	99 . 7 . 55,73	Saturn.
52,13	32 . 9 . 59,29				37,43				69 . 57 . 45,00	Arcturus R.
	32 . 9 . 58,65								69 . 57 . 44,36	Arcturus.
	33 . 58 . 44,39	30,110	54,8	59,6	38,80	4,71		15 . 50,70	72 . 2 . 17,46	⊙.
	34 . 30 . 22,62				39,58	4,78			72 . 2 . 15,00	⊙.
	25 . 48 . 26,33	30,087	58,8	62,2	27,68	4,91	11,162	11,58	63 . 35 . 45,80	Venus.
	29 . 6 . 32,08	30,080	60,2	62,3	31,85	0,71		14,66	66 . 53 . 56,84	Jupiter.
	38 . 38 . 31,62	30,092	54,4	57,0	46,22	3,37			76 . 26 . 22,75	Vesta.
51,43	−39 . 20 . 24,96	30,100	54,2	54,5	47,63				−1 . 34 . 4,31	Polaris SP. R.
	−39 . 20 . 27,00								−1 . 34 . 6,35	Polaris SP.
52,01	2 . 4 . 46,94			53,8	2,11				39 . 51 . 57,33	η Urs. Maj. R.
	2 . 4 . 46,05								39 . 51 . 56,44	η Ursæ Majoris.
	61 . 17 . 36,95		54,0	53,6	1 . 45,91	0,85	9,170	9,18	99 . 6 . 39,47	Saturn.
52,22	32 . 10 . 0,58				36,62				69 . 57 . 45,48	Arcturus R.
	32 . 10 . 0,12								69 . 57 . 46,02	Arcturus.
	−0 . 23 . 47,83				0,40				37 . 23 . 20,05	θ Bootis.
53,18	57 . 7 . 58,48		53,8	54,5	1 . 29,75				94 . 56 . 36,51	μ Virginis R.
	57 . 7 . 59,95								94 . 56 . 37,98	μ Virginis.
52,81	67 . 32 . 2,30				2 . 19,65				105 . 21 . 30,23	α^2 Libræ R.
	67 . 32 . 3,02								105 . 21 . 30,95	α^2 Libræ.
	60 . 3 . 9,33				1 . 40,58				97 . 51 . 58,19	δ Libræ.
	−36 . 12 . 20,82	30,162	55,0	58,5	42,30				1 . 34 . 5,16	Polaris.
	34 . 15 . 13,84	30,170	61,8	64,0	38,93	4,74		15 . 50,50	71 . 47 . 5,81	⊙.
	33 . 43 . 31,78				38,16	4,68			71 . 47 . 4,04	⊙.
	29 . 25 . 12,53	30,172	63,5	65,7	32,14	3,48			67 . 12 . 49,47	Mercury.
50,42	6 . 23 . 18,55		63,3	64,7	6,40				44 . 10 . 33,23	Capella R.
	6 . 23 . 14,48								44 . 10 . 29,16	Capella.
	25 . 51 . 14,73		64,4	65,6	27,62	4,97	11,200	11,97	63 . 38 . 33,69	Venus.
	29 . 7 . 32,97				31,76	0,71	11,460	14,69	66 . 54 . 57,61	Jupiter.
	38 . 43 . 59,45	30,200	59,7	59,2	46,32	3,35			76 . 31 . 50,70	Vesta.
52,13	−39 . 20 . 25,33	30,216	58,0	57,2	47,54				−1 . 34 . 4,59	Polaris SP. R.
	−39 . 20 . 25,97								−1 . 34 . 5,23	Polaris SP.
52,00	62 . 29 . 21,96				1 . 50,97				100 . 18 . 21,21	Spica R.
	62 . 29 . 21,05								100 . 18 . 20,30	Spica.
51,96	−64 . 53 . 42,38		57,3	57,5	2 . 3,15				−27 . 8 . 37,25	ε Cassiop. SP. R.
	−64 . 53 . 43,37								−27 . 8 . 38,24	ε Cassiopeiæ SP.
	61 . 16 . 36,75				1 . 45,45	0,85	10,949	9,36	99 . 5 . 20,27	Saturn
51,37	32 . 10 . 1,14				36,48				69 . 57 . 45,90	Arcturus R.
	32 . 9 . 58,98								69 . 57 . 43,74	Arcturus.
	−36 . 12 . 20,37	30,289	56,2	58,6	42,47				1 . 34 . 5,44	Polaris.
	33 . 28 . 42,22	30,290	62,0	64,6	37,91	4,65		15 . 50,30	71 . 32 . 14,06	⊙.
	34 . 0 . 21,38				38,68	4,71			71 . 32 . 13,33	⊙.
	28 . 57 . 29,07		62,6	65,5	31,67	3,48			66 . 45 . 5,54	Mercury.
54,86	6 . 23 . 15,56		63,4	66,6	6,40				44 . 10 . 30,24	Capella R.
	6 . 23 . 15,07								44 . 10 . 29,75	Capella.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},051. One revolution = 20″,843.
Correction for Runs = − 0″,5.
Adopted Zenith Point = 195° . 9′ . 52″45. From May 13. = 195° . 9′ . 55″,10.
Assumed Co-latitude = 37° . 47′ . 8″,28.
No assignable reason for change of Zenith Point.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
May 13	α Orionis R. M.	330.20	1.41,2	42,8	36,0	43,5	39,5	40,7	14,193	-1.26,32	330.20.14,26	G.
	α Orionis	239.55	4.37,3	35,9	32,2	34,0	35,3	33,8			239.59.34,67	G.
	Venus S.L.	221. 0	4.34,0	34,9	29,8	34,2	32,1	29,8			221. 4.32,40	G.
	Regulus R. M.	335.45	0. 8,9	5,0	2,0	8,0	4,0	5,3	13,758	-1.17,27	335.43.48,26	G.
	Regulus	234.35	0.64,2	61,8	57,0	61,0	59,3	61,9			234.36. 0,85	G.
	α Urs. Maj. R. M.	25.35	1.59,0	57,5	52,3	57,5	53,2	56,5	15,001	-1.43,17	25.35.12,80	G.
	α Ursæ Majoris	184.40	4.42,0	38,4	34,8	38,0	36,2	38,0			184.44.37,48	G.
	Vesta M.	234. 0	1.52,8	48,0	43,3	46,9	46,0	48,5	16,312	-2.10,50	233.59.47,05	G.
	Polaris SP. R. M.	54.30	1.45,6	43,8	37,3	42,2	41,5	42,9	13,978	-1.21,86	54.30.20,32	G.
	Polaris SP.	155.45	4.32,0	29,8	26,3	29,7	27,0	29,8			155.49.29,03	G.
	ε Cassiop. SP. R.M.	80. 5	0.24,3	21,0	17,1	23,2	18,3	24,0	15,056	-1.44,32	80. 3.37,00	G.
	ε Cassiopeiæ SP.	130.15	1.18,4	13,3	10,7	14,9	10,3	14,7			130.16.13,70	G.
	(*a*) Saturn N.L.	256.20	4.57,8	54,2	52,3	54,4	52,9	55,0			256.24.54,43	G.
	Polaris	158.55	2.37,8	35,6	32,0	37,4	33,2	35,2			158.57.35,15	G.
May 14	⊙ S.L. M.	228.55	2.39,3	35,6	30,4	36,0	34,0	36,2	15,443	-1.52,39	228.55.42,81	G.
	⊙ N.L.	228.20	4. 8,8	6,2	3,0	6,0	2,3	4,2			228.24. 5,02	G.
	Mercury center.	223.40	2.19,7	15,9	13,1	16,8	13,7	15,6			223.42.15,77	G.
	Capella R. M.	8.45	2.23,2	22,1	18,1	23,9	18,6	19,8	12,122	-43,17	8.46.37,75	G.
	Capella	201.30	3.17,3	12,8	10,5	12,5	9,8	10,4			201.33.12,17	G.
	Venus S.L.	221. 5	3.33,3	28,2	26,4	29,0	26,2	28,7			221. 8.28,58	G.
	Jupiter S.L.	224.15	4.34,0	29,0	26,0	29,8	28,6	29,2			224.19.29,37	G.
	Vesta	234. 5	0.32,5	26,8	24,8	27,8	25,8	29,3			234. 5.27,83	G.
	ε Cassiop. SP. R.M.	80. 5	0.31,2	26,9	23,2	29,4	23,8	28,8	15,422	-1.51,95	80. 3.35,27	G.
	ε Cassiopeiæ SP.	130.15	1.21,5	15,3	15,8	17,3	13,0	17,7			130.16.16,75	G.
	Saturn S.L.	256.20	3.61,2	57,8	57,0	56,9	54,1	56,1			256.23.57,12	G.
	Arcturus R. M.	343. 0	0.57,3	55,0	53,0	55,8	54,1	54,3	12,841	-58,16	342.59.56,74	G.
	(*a*) Arcturus	227.15	4.56,9	52,9	50,6	54,0	51,7	54,2			227.19.53,38	G.
May 16	⊙ S.L. M.	228.25	4.12,1	11,1	7,0	10,8	7,0	7,7	14,582	-1.34,44	228.27.34,58	G.
	⊙ N.L.	227.55	0.61,7	58,8	55,0	59,0	55,0	55,9			227.55.57,50	G.
	Mercury center	222.55	4.50,6	49,9	42,4	48,8	47,0	46,4			222.59.47,22	G.
	(*b*) Capella R. M.	8.45	2.14,9	12,0	8,9	14,2	8,7	11,8	11,624	-32,78	8.46.38,84	G.
	Capella	201.30	3.18,0	13,4	11,7	15,0	10,8	11,9			201.33.13,25	G.
	Venus S.L.	221.15	2.65,3	64,4	58,9	63,4	59,8	60,0			221.18. 1,78	G.
	Vesta	234.15	2.46,3	42,7	37,9	41,3	41,8	42,7			234.17.41,95	G.
	γ Ursæ Maj. R. M.	17.30	3.18,1	15,9	10,3	15,0	11,2	14,6	8,892	+24,15	17.33.38,12	G.
	γ Ursæ Majoris	192.45	1.21,4	16,0	14,7	18,4	14,4	17,3			192.46.16,95	G.
	ε Cassiop. SP. R.M.	80. 5	0.38,7	34,3	31,3	36,9	32,0	36,3	15,651	-1.56,73	80. 3.38,15	G.
	(*c*) ε Cassiopeiæ SP.	130.15	1.22,7	16,8	14,8	18,0	14,3	19,3		-1,17	130.16.16,40	G.
	Saturn S.L.	256.20	1.35,4	31,1	29,4	32,3	28,8	32,2			256.21.31,43	G.
	Arcturus R. M.	343. 0	0.23,0	19,2	17,0	21,5	18,5	20,2	11,101	-21,88	342.59.58,00	G.
	(*a*) Arcturus	227.15	4.57,4	54,4	51,7	56,1	52,8	54,8			227.19.54,53	G.
	N² Virginis	253.30	0.62,3	57,7	56,3	59,0	56,0	57,6			253.30.58,08	G.
	μ Virginis R. M.	318. 0	3.10,7	5,0	4,5	6,4	3,8	4,4	13,188	-1. 5,39	318. 2. 0,21	G.
	μ Virginis	252.15	2.58,8	54,2	51,0	54,4	51,5	53,7			252.17.53,75	G.
	Polaris	158.55	2.38,9	36,0	34,3	36,9	34,4	35,4			158.57.35,82	G.
May 17	⊙ N.L. M.	227.40	3.19,5	19,0	13,8	16,0	13,5	14,7	12,747	-56,21	227.42.19,67	G.
	(*d*) ⊙ S.L. M.	228.10	4.57,9	57,9	53,0	56,3	52,5	52,0	12,747	-56,21	228.13.58,41	G.
	Mercury center	222.40	2.22,9	22,7	25,3	22,0	18,0	18,9			222.42.21,48	G.
	Venus S.L.	221.20	3.40,0	39,2	32,1	39,5	36,0	36,2			221.23.36,93	G.
	Jupiter S.L.	224.20	2.41,2	41,1	33,0	40,5	38,4	37,9			224.22.38,52	G.
	Pollux R. M.	351.20	3.12,4	8,2	6,4	11,9	6,2	9,5	11,600	-32,28	351.22.36,62	G.
	Pollux	218.55	2.22,1	19,8	14,3	20,1	17,0	17,5			218.57.18,32	G.

(*a*) No correction for runs.
(*b*) Very faint: not good.
(*c*) At the 5th wire.
(*d*) Taken on the micrometer wire.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
54,47	44 . 49 . 40,84	30,290	63,4	66,3	56,76				82 . 37 . 45,88	α Orionis R.
	44 . 49 . 39,57								82 . 37 . 44,61	α Orionis.
	25 . 54 . 37,30		62,2		27,77	5,03	11,212	12,10	63 . 41 . 56,22	Venus.
54,56	39 . 26 . 6,84		63,4	63,1	47,26				77 . 14 . 2,38	Regulus R.
	39 . 26 . 5,75								77 . 14 . 1,29	Regulus.
55,14	− 10 . 25 . 17,70	30,300	61,6	60,4	10,64				27 . 21 . 39,94	α Urs. Maj. R.
	− 10 . 25 . 17,62								27 . 21 . 40,02	α Ursæ Majoris.
	38 . 49 . 51,95	30,315	60,5	59,6	46,62	3,34			76 . 37 . 43,51	Vesta.
54,68	− 39 . 20 . 25,22	30,348	59,0	58,0	47,68				− 1 . 34 . 4,62	Polaris SP. R.
	− 39 . 20 . 26,07								− 1 . 34 . 5,47	Polaris SP.
55,35	− 64 . 53 . 41,90	30,350	57,8	56,1	2 . 4,03				− 27 . 8 . 37,65	ε Cassiop. SP. R.
	− 64 . 53 . 41,40								− 27 . 8 . 37,15	ε Cassiopeiæ SP.
	61 . 14 . 59,33				1 . 46,08	0,85	9,130	9,60	99 . 4 . 2,44	Saturn.
	− 36 . 12 . 19,95	30,488	57,2	58,3	42,76				1 . 34 . 5,57	Polaris.
	33 . 45 . 47,71	30,500	61,0	61,8	38,80	4,68		15 . 50,10	71 . 17 . 40,01	⊙.
	33 . 14 . 9,92				38,04	4,62			71 . 17 . 41,72	⊙.
	28 . 32 . 20,67		61,7	62,3	31,54	3,49			66 . 19 . 57,00	Mercury.
54,96	6 . 23 . 17,35				6,50				44 . 10 . 32,13	Capella R.
	6 . 23 . 17,07								44 . 10 . 31,85	Capella.
	25 . 58 . 33,48	30,488	62,0	61,9	28,27	5,10	11,181	11,78	63 . 45 . 53,15	Venus.
	29 . 9 . 34,27				32,37	0,71	11,427	14,34	66 . 56 . 59,87	Jupiter.
	38 . 55 . 32,73	30,524	57,5	55,9	47,45	3,33			76 . 43 . 25,13	Vesta.
56,01	− 64 . 53 . 40,17	30,538	55,5	53,8	2 . 5,38				− 27 . 8 . 37,27	ε Cassiop. SP. R.
	− 64 . 53 . 38,35								− 27 . 8 . 35,45	ε Cassiopeiæ SP.
	61 . 14 . 2,02				1 . 47,17	0,85	10,960	9,48	99 . 2 . 47,14	Saturn.
55,06	32 . 9 . 58,36				37,13				69 . 57 . 43,77	Arcturus R.
	32 . 9 . 58,28								69 . 57 . 43,69	Arcturus.
	33 . 17 . 39,48	30,484	62,3	63,3	37,98	4,62		15 . 49,70	70 . 49 . 31,42	⊙.
	32 . 46 . 2,40				37,23	4,56			70 . 49 . 33,05	⊙.
	27 . 49 . 52,12	30,460	62,8	64,7	30,43	3,53			65 . 37 . 27,30	Mercury.
56,05	6 . 23 . 16,26				6,46				44 . 10 . 31,00	Capella R.
	6 . 23 . 18,15								44 . 10 . 32,89	Capella.
	26 . 8 . 6,68	30,454	63,8	65,2	28,25	5,25	11,230	12,29	63 . 55 . 25,67	Venus.
	39 . 7 . 44,78	30,480	60,3	59,7	47,37	3,31			76 . 55 . 37,12	Vesta.
57,54	− 2 . 23 . 40,95				2,44				35 . 23 . 24,89	γ Ursæ Maj. R.
	− 2 . 23 . 40,22								35 . 23 . 25,62	γ Ursæ Majoris.
57,28	− 64 . 53 . 40,98	30,484	58,0	55,3	2 . 4,77				− 27 . 8 . 37,47	ε Cassiop. SP. R.
	− 64 . 53 . 40,77								− 27 . 8 . 37,26	ε Cassiopeiæ SP.
	61 . 11 . 34,26				1 . 46,47	0,85	10,956	9,43	99 . 0 . 18,73	Saturn.
56,27	32 . 9 . 59,17				36,95				69 . 57 . 44,40	Arcturus R.
	32 . 9 . 57,36								69 . 57 . 42,59	Arcturus.
	58 . 21 . 0,91		57,3	54,8	1 . 35,16				96 . 9 . 44,35	N^2 Virginis.
56,98	57 . 7 . 56,96				1 . 30,81				94 . 56 . 36,05	μ Virginis R.
	57 . 7 . 56,58								94 . 56 . 35,67	μ Virginis.
	− 36 . 12 . 21,35	30,486	57,0	58,0	42,79				1 . 34 . 4,14	Polaris.
	32 . 32 . 22,50	30,472	62,3	64,6	36,80	4,53		15 . 49,50	70 . 35 . 52,55	⊙.
	33 . 4 . 1,24				37,55	4,59			70 . 35 . 52,98	⊙.
	27 . 32 . 24,31	30,450	61,8	65,8	29,99	3,56			65 . 19 . 59,02	Mercury.
	26 . 13 . 39,76	30,430	63,4	67,5	28,22	5,32	11,264	12,64	64 . 0 . 58,30	Venus.
	29 . 12 . 41,35				32,03	0,71	11,432	14,39	67 . 0 . 6,56	Jupiter.
57,47	23 . 47 . 20,55	30,410	63,7	67,0	25,26				61 . 34 . 54,09	Pollux R.
	23 . 47 . 21,15								61 . 34 . 54,69	Pollux.

Coincidence of Micrometer Wire with fixed Wire = $10^{r},051$. One revolution = 20″,843.
Correction for Runs = −0″,5. From May 16. = − 1″,9.
Adopted Zenith Point = 195° . 9′ . 55″,10. From γ Urs. Maj. May 16. 195° . 9′ . 57″,17.
Assumed Co-latitude = 37° . 47′ . 8″,28.
The change of Zenith Point gradual.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
May 17	α Cassiop. SP. R. M.	87 . 15	2 . 22,3	18,6	15,8	20,8	16,1	18,2	13,488	– 1 . 11,65	87 . 16 . 6,83	G.
	α Cassiopeiæ SP.	123 . 0	3 . 50,8	47,5	42,8	48,4	44,4	46,2			123 . 3 . 46,45	G.
	Polaris SP. R. M.	54 . 30	1 . 54,8	53,9	47,8	53,5	51,3	51,9	14,333	– 1 . 29,25	54 . 30 . 22,83	G.
	Polaris SP.	155 . 45	4 . 33,2	30,1	26,9	31,1	28,3	30,2			155 . 49 . 29,68	G.
	Spica R. M.	312 . 40	2 . 13,4	9,2	8,0	11,2	8,5	10,3	14,563	– 1 . 34,04	312 . 40 . 35,93	G.
	Spica	257 . 35	4 . 20,4	16,2	15,4	18,0	14,4	17,3			257 . 39 . 16,68	G.
	Saturn N.L.	256 . 20	0 . 4,7	3,0	2,0	3,9	0,6	1,4			256 . 20 . 2,28	G.
	(*a*) Arcturus R. M.	342 . 55	4 . 47,2	45,4	43,0	45,9	45,2	43,8	9,427	+ 13,01	342 . 59 . 57,79	G.
	Arcturus	227 . 15	4 . 57,8	55,8	52,9	54,7	53,9	53,9			227 . 19 . 54,52	G.
	N² Virginis	253 . 30	0 . 64,0	59,0	58,0	60,5	58,4	59,1			253 . 30 . 59,93	G.
	Polaris	158 . 55	2 . 40,0	36,2	33,9	37,3	34,7	36,0			158 . 57 . 36,18	G.
May 18	⊙ S.L. M.	228 . 0	3 . 20,0	18,2	12,2	19,2	14,0	16,9	17,443	– 2 . 34,07	228 . 0 . 42,48	G.
	⊙ N.L.	227 . 25	4 . 7,3	6,0	1,0	7,4	0,3	4,5			227 . 29 . 4,17	G.
	Mercury center	222 . 25	2 . 26,2	25,6	20,8	27,4	23,9	23,9			222 . 27 . 24,48	G.
	Capella R. M.	8 . 45	2 . 13,2	9,0	8,2	11,3	7,9	9,3	11,522	– 30,66	8 . 46 . 39,02	G.
	Capella	201 . 30	3 . 17,8	16,3	13,0	16,4	14,3	13,0			201 . 33 . 14,93	G.
	Venus S.L.	221 . 25	4 . 44,2	44,5	37,3	44,7	42,2	39,9			221 . 29 . 41,83	G.
	Jupiter S.L.	224 . 20	3 . 51,3	51,1	44,7	50,8	48,3	46,2			224 . 23 . 48,50	G.
	Pollux R. M.	351 . 20	3 . 13,4	10,5	9,0	14,0	11,1	10,3	11,807	– 36,60	351 . 22 . 34,58	G.
	Pollux	218 . 55	2 . 22,0	17,7	14,8	18,7	18,0	17,6			218 . 57 . 17,98	G.
	Regulus R. M.	335 . 45	0 . 31,0	29,2	23,9	31,0	29,2	28,8	14,730	– 1 . 37,53	335 . 43 . 51,29	G.
	Regulus	234 . 35	1 . 8,3	2,9	2,8	3,0	3,5	2,9			234 . 36 . 3,83	G.
	Vesta	234 . 30	0 . 38,9	36,4	29,4	36,4	35,3	36,5			234 . 30 . 35,45	G.
	Saturn S.L.	256 . 15	4 . 12,9	9,8	8,0	10,2	6,8	9,2			256 . 19 . 9,22	G.
May 19	(*b*) ⊙ N.L. M.	227 . 15	1 . 45,5	45,1	39,6	45,0	41,8	41,8	11,680	– 33,96	227 . 16 . 9,07	G.
	⊙ S.L.	227 . 45	2 . 46,6	46,5	41,3	46,4	44,0	43,0			227 . 47 . 44,47	G.
	Mercury center	222 . 10	4 . 53,0	51,8	47,6	53,0	50,0	48,0			222 . 14 . 50,27	G.
	Jupiter S.L.	224 . 20	4 . 57,8	56,8	51,7	56,7	54,5	52,1			224 . 24 . 54,62	G.
	Pollux R. M.	351 . 20	3 . 12,7	9,0	9,2	12,2	9,2	9,1	11,680	– 33,96	351 . 22 . 36,07	G.
	Pollux	218 . 55	2 . 22,2	18,9	15,8	20,4	18,5	18,1			218 . 57 . 18,83	G.
	Regulus R. M.	335 . 45	0 . 24,0	19,8	18,8	23,3	19,3	21,6	14,319	– 1 . 28,96	335 . 43 . 52,16	G.
	Regulus	234 . 35	1 . 7,3	3,8	2,1	4,7	2,8	3,2			234 . 36 . 3,92	G.
	γ Urs. Maj. R. M.	17 . 30	3 . 39,3	37,1	32,3	37,3	34,7	34,8	9,895	+ 3,25	17 . 33 . 38,93	G.
	γ Ursæ Majoris	192 . 45	1 . 20,8	16,2	15,3	19,4	14,0	17,0			192 . 46 . 17,03	G.
	α Cassiop. SP. R. M.	87 . 15	2 . 26,8	22,7	21,5	26,2	21,2	23,4	13,760	– 1 . 17,31	87 . 16 . 6,17	G.
	α Cassiopeiæ SP.	123 . 0	3 . 53,7	50,1	47,3	51,9	47,5	48,9			123 . 3 . 49,67	G.
	Polaris SP. R. M.	54 . 30	1 . 27,3	24,2	20,5	26,4	22,1	25,2	12,906	– 59,50	54 . 30 . 24,70	G.
	Polaris SP.	155 . 45	4 . 34,2	31,3	28,9	33,5	29,6	30,9			155 . 49 . 31,12	G.
	Saturn N.L.	256 . 15	2 . 45,8	43,0	40,0	44,5	40,2	42,3			256 . 17 , 42,47	G.
	Polaris	158 . 55	2 . 40,9	36,3	35,4	38,8	34,1	36,3			158 . 57 . 36,80	G.
May 20	⊙ S.L. M.	227 . 35	1 . 32,8	30,2	25,3	30,0	26,8	28,7	13,758	– 1 . 17,27	227 . 35 . 11,60	G.
	⊙ N.L.	227 . 0	3 . 35,0	32,5	27,8	33,2	30,1	30,3			227 . 3 . 31,27	G.
	(*c*) Capella R. M.	8 . 45	2 . 13,6	11,0	9,2	13,7	10,3	9,5	11,590	– 32,08 – 0,61	8 . 46 . 38,39	G.
	Capella	201 . 30	3 . 18,2	14,7	12,3	14,9	13,4	13,0		+ 0,61	201 . 33 . 14,83	G.
	Mercury center	222 . 0	4 . 38,5	36,5	31,9	36,9	35,7	34,7			222 . 4 . 35,40	G.
	Jupiter S.L.	224 . 25	0 . 63,9	63,2	58,2	63,5	63,0	58,9			224 . 26 . 1,72	G.
	Venus S.L.	221 . 40	3 . 29,5	29,0	23,9	29,4	27,5	25,5			221 . 43 . 27,25	G.
	Procyon R. M.	328 . 35	2 . 10,0	8,3	2,5	10,6	5,6	7,9	11,916	– 38,86	328 . 36 . 28,49	G.
	Procyon.	241 . 40	3 . 28,4	26,2	21,8	26,0	26,5	24,6			241 . 43 . 25,37	G.

(*a*) Not good.

(*b*) Very great waving motion.

(*c*) The reflexion observation a few seconds before the 5th wire, and the direct observation a few seconds after. The correction for curvature of path is calculated for the 5th wire.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
56,64	−72 . 6 . 9,66	30,400	61,5	60,9	2 . 57,47				−34 . 21 . 58,85	α Cassiop. SP. R.
	−72 . 6 . 10,72								−34 . 21 . 59,91	α Cassiopeiæ SP.
56,26	−39 . 20 . 25,66		61,3	60,3	47,54				−1 . 34 . 4,92	Polaris SP. R.
	−39 . 20 . 27,49								−1 . 34 . 6,75	Polaris SP.
56,31	62 . 29 . 21,24				1 . 50,95				100 . 18 . 20,47	Spica R.
	62 . 29 . 19,51								100 . 18 . 18,74	Spica.
	61 . 10 . 5,11	30,390	59,6	57,5	1 . 45,48	0,84	9,122	9,69	98 . 59 . 7,72	Saturn.
56,16	32 . 9 . 59,38				36,68				69 . 57 . 44,34	Arcturus R.
	32 . 9 . 57,35								69 . 57 . 42,31	Arcturus.
	58 . 21 . 2,76			56,9	1 . 34,46				96 . 9 . 45,50	N² Virginis.
	−36 . 12 . 20,99	30,298	59,4	61,7	42,22				1 . 34 . 5,07	Polaris.
	32 . 50 . 45,31	30,272	64,0	66,8	36,83	4,56		15 . 49,30	70 . 22 . 36,56	⊙.
	32 . 19 . 7,00				36,09	4,50			70 . 22 . 36,17	⊙.
	27 . 17 . 27,31	30,250	63,0	66,7	29,43	3,59			65 . 5 . 1,43	Mercury.
56,98	6 . 23 . 18,15				6,39				44 . 10 . 32,82	Capella R.
	6 . 23 . 17,76								44 . 10 . 32,43	Capella.
	26 . 19 . 44,66	30,234	63,8	68,1	28,13	5,41	11,260	12,60	64 . 7 . 3,06	Venus.
	29 . 13 . 51,33				31,81	0,71	11,410	14,16	67 . 1 . 16,55	Jupiter.
56,28	23 . 47 . 22,59		64,4	66,9	25,12				61 . 34 . 55,99	Pollux R.
	23 . 47 . 20,81								61 . 34 . 54,21	Pollux.
57,56	39 . 26 . 5,88			65,6	46,95				77 . 14 . 1,11	Regulus R.
	39 . 26 . 6,66								77 . 14 . 1,89	Regulus.
	39 . 20 . 38,28	30,250	63,0	62,3	47,12	3,28			77 . 8 . 30,40	Vesta.
	61 . 9 . 12,05	30,274	56,8	54,0	1 . 45,85	0,84	10,936	9,22	98 . 57 . 56,12	Saturn.
	32 . 6 . 11,90	30,230	60,6	61,7	36,10	4,47		15 . 49,10	70 . 9 . 40,91	⊙.
	32 . 37 . 47,30				36,84	4,54			70 . 9 . 38,78	⊙.
	27 . 4 . 53,10	30,208		62,4	29,37	3,64			64 . 52 . 27,11	Mercury.
	29 . 14 . 57,45				32,18	0,71	11,427	14,34	67 . 2 . 22,86	Jupiter.
57,45	23 . 47 . 21,10				25,33				61 . 34 . 54,71	Pollux R.
	23 . 47 . 21,66								61 . 34 . 55,27	Pollux.
58,05	39 . 26 . 5,01	30,145	60,8	61,0	47,24				77 . 14 . 0,53	Regulus R.
	39 . 26 . 6,75								77 . 14 . 2,27	Regulus.
57,98	−2 . 23 . 41,76	30,132	59,2	57,0	2,42				35 . 23 . 24,10	γ Urs. Maj. R.
	−2 . 23 . 40,14								35 . 23 . 25,72	γ Ursæ Majoris.
57,97	−72 . 6 . 9,00		57,8	55,7	2 . 57,75				−34 . 21 . 58,47	α Cassiop. SP. R.
	−72 . 6 . 7,50								−34 . 21 . 56,97	α Cassiopeiæ SP.
57,91	−39 . 20 . 27,53			54,6	47,66				−1 . 34 . 6,91	Polaris SP. R.
	−39 . 20 . 26,05								−1 . 34 . 5,43	Polaris SP.
	61 . 7 . 45,30		55,0	51,5	1 . 45,77	0,84	9,178	9,10	98 . 56 . 47,61	Saturn.
	−36 . 12 . 20,37	30,060	55,3	56,1	42,35				1 . 34 . 5,56	Polaris.
	32 . 25 . 14,43	30,010	62,0	63,5	36,15	4,51		15 . 48,90	69 . 57 . 5,45	⊙.
	31 . 53 . 34,10				35,42	4,44			69 . 57 . 2,26	⊙.
56,61	6 . 23 . 18,78	29,987	62,2	64,9	6,35				44 . 10 . 33,41	Capella R.
	6 . 23 . 17,66								44 . 10 . 32,29	Capella.
	26 . 54 . 38,23				28,80	3,69			64 . 42 . 11,62	Mercury.
	29 . 16 . 4,55	29,938	62,8	66,2	31,66	0,70	11,414	14,20	67 . 3 . 29,59	Jupiter.
	26 . 33 . 30,08				28,24	5,58	11,333	13,36	64 . 20 . 47,66	Venus.
56,93	46 . 33 . 28,68				59,60				84 . 21 . 36,56	Procyon R.
	46 . 33 . 28,20								84 . 21 . 36,08	Procyon.

Coincidence of Micrometer Wire with fixed Wire = 10r,051. One revolution = 20″,843.
Correction for Runs = −1″,9.
Adopted Zenith Point = 195° . 9′ . 57″,17.
Assumed Co-latitude = 37° . 47′ . 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
May 20	Pollux R. M.	351 . 20	3 . 8,3	6,7	4,0	9,4	7,0	6,1	11,574	− 31,74	351 . 22 . 34,98	G.
	(*a*) Pollux	218 . 55	2 . 22,0	18,9	15,6	18,9	19,1	16,8		+ 0,32	218 . 57 . 18,72	G.
	(*b*) ☽ N.L.	221 . 35	4 . 42,0	40,0	35,9	40,0	39,8	36,4			221 . 39 . 38,72	G.
	(*c*) Polaris SP. R. M. .	54 . 30	1 . 40,4	36,1	30,6	37,1	34,8	36,9	13,430	− 1 . 10,43	54 . 30 . 25,45	G.
	Polaris SP.	155 . 45	4 . 33,1	30,0	26,5	31,6	28,3	28,6			155 . 49 . 29,40	G.
	Arcturus R. M.	342 . 55	4 . 57,0	54,6	51,0	55,7	53,4	52,9	9,830	+ 4,61	342 . 59 . 58,39	G.
	(*a*) Arcturus	227 . 15	4 . 60,5	56,3	53,2	57,5	54,8	55,3		+ 0,22	227 . 19 . 56,17	G.
May 21	(*d*) ⊙ N.L. M.	226 . 50	2 . 43,2	40,8	35,9	41,8	39,0	38,2	13,954	− 1 . 21,35	226 . 51 . 18,30	G.
	⊙ S.L.	227 . 20	2 . 58,0	54,9	52,2	57,2	53,4	53,7			227 . 22 . 54,72	G.
	Jupiter N.L.	224 . 25	1 . 47,9	45,1	40,4	46,9	43,2	43,2			224 . 26 . 44,35	G.
	Venus S.L.	221 . 50	1 . 5,2	2,9	0,2	4,9	0,6	1,8			221 . 51 . 2,53	G.
	Vesta	234 . 50	1 . 30,0	25,0	23,0	26,9	21,8	26,7			234 . 51 . 25,48	G.
	γ Urs. Maj. R. M. .	17 . 30	4 . 10,0	6,5	4,5	5,8	3,0	4,0	11,300	− 26,03	17 . 33 . 39,34	G.
	γ Ursæ Majoris	192 . 45	1 . 21,0	16,7	14,7	19,8	14,7	18,1			192 . 46 . 17,42	G.
	(*e*) Polaris SP. R. M. .	54 . 30	1 . 21,0	17,0	13,7	17,9	14,9	16,8	12,374	− 48,42	54 . 30 . 28,38	G.
	Polaris SP.	155 . 45	4 . 36,3	33,2	30,3	33,9	31,3	32,4			155 . 49 . 32,62	G.
	Spica R. M.	312 . 40	2 . 11,0	5,0	4,8	7,5	3,4	6,5	14,248	− 1 . 27,48	312 . 40 . 38,75	G.
	Spica	257 . 35	4 . 20,7	15,4	15,9	17,6	13,5	16,8			257 . 39 . 16,38	G.
	Saturn N.L.	256 . 15	0 . 34,1	30,0	28,1	32,0	28,6	31,2			256 . 15 . 30,63	G.
	Arcturus R. M.	343 . 0	0 . 37,6	34,1	32,5	37,6	33,7	34,8	11,710	− 34,58	343 . 0 . 0,44	G.
	(*f*) Arcturus	227 . 15	4 . 57,0	53,5	51,0	55,0	52,0	54,0			227 . 19 . 53,75	G.
May 22	(*g*) ☽ N.L.	227 . 45	0 . 34,3	30,8	28,0	32,4	28,9	29,7		+ 5,98	227 . 45 . 36,63	G.
	☽ N.L. M.	227 . 45	0 . 34,3	30,8	28,0	32,4	28,9	29,7	9,950	+ 2,10 + 2,99	227 . 45 . 35,74	G.
	☽ N.L. M.	227 . 45	0 . 34,3	30,8	28,0	32,4	28,9	29,7	9,813	+ 4,97	227 . 45 . 35,62	G.
	☽ N.L. M.	227 . 45	0 . 34,3	30,8	28,0	32,4	28,9	29,7	9,679	+ 7,75 − 2,99	227 . 45 . 35,41	G.
	☽ N.L. M.	227 . 45	0 . 34,3	30,8	28,0	32,4	28,9	29,7	9,548	+ 10,48 − 5,98	227 . 45 . 35,15	G.
	α^2 Libræ R. M.	307 . 35	3 . 35,7	30,8	29,2	31,2	28,0	31,0	11,680	− 33,96	307 . 37 . 56,81	G.
	α^2 Libræ	262 . 40	1 . 61,2	57,0	58,3	58,0	53,8	57,7			262 . 41 . 57,55	G.
	β Urs. Min. R. M. ..	37 . 45	3 . 9,7	5,0	2,9	6,6	1,8	4,4	15,320	− 1 . 49,83	37 . 46 . 15,04	G.
	β Ursæ Minoris	172 . 30	3 . 46,2	42,7	40,2	43,8	40,8	41,5			172 . 33 . 42,30	G.
May 25	⊙ N.L. M.	226 . 5	2 . 23,2	21,8	17,5	22,6	19,2	21,1	14,580	− 1 . 34,40	226 . 5 . 46,63	G.
May 26	⊙ S.L. M.	226 . 25	3 . 42,3	43,0	37,3	43,0	40,9	39,1	15,282	− 1 . 49,04	226 . 26 . 52,09	G.
	⊙ N.L.	225 . 55	0 . 18,6	18,2	13,5	18,7	17,6	16,8			225 . 55 . 17,25	G.
	Mercury center	221 . 45	1 . 37,9	37,7	32,5	38,2	36,6	35,3			221 . 46 . 36,45	G.
	Jupiter S.L.	224 . 30	3 . 26,0	23,9	19,3	24,4	23,5	21,8			224 . 33 . 23,35	G.
	Venus S.L.	222 . 35	0 . 64,0	62,4	57,9	62,9	61,1	60,4			222 . 36 . 1,50	G.
	(*h*) Regulus R. M.	335 . 45	0 . 45,4	43,6	38,6	45,1	43,6	42,6	15,322	− 1 . 49,87	335 . 43 . 53,31	G.
	Regulus	234 . 35	1 . 5,4	2,3	0,3	2,9	2,5	2,1			234 . 36 . 2,65	G.
	α Ursæ Maj. R. M.	25 . 35	1 . 27,8	27,2	21,3	29,1	26,2	25,6	13,398	− 1 . 9,76	25 . 35 . 16,52	G.
	α Ursæ Majoris	184 . 40	4 . 41,8	40,8	37,0	42,0	40,0	39,0			184 . 44 . 40,37	G.
	α Cassiopeiæ SP. R. M.	87 . 15	2 . 14,8	12,7	9,0	14,1	9,8	10,8	13,254	− 1 . 6,76	87 . 16 . 5,22	G.
	α Cassiopeiæ SP. ..	123 . 0	3 . 56,1	53,0	49,2	54,8	50,3	51,2		− 0,88	123 . 3 . 51,77	G.

(*a*) At the 5th wire.

(*b*) Very faint.

(*c*) The shutters were opened just before this observation, having been closed during a shower of rain.

(*d*) Hurried.

(*e*) Blur. This observation is not taken into account in determining the zenith point.

(*f*) No correction for runs.

(*g*) At the five wires.

(*h*) Both observations very good.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
56,85	23 . 47 . 22,19	29,938	62,8	66,2	24,91				61 . 34 . 55,38	Pollux R.
	23 . 47 . 21,55								61 . 34 . 54,74	Pollux.
	26 . 29 . 41,55	29,930	63,4	66,6	28,13	24 . 0,34		14 . 47,22	64 . 8 . 4,84	☽.
57,43	− 39 . 20 . 28,28	29,916	61,0	60,5	46,77				− 1 . 34 . 6,77	Polaris SP. R.
	− 39 . 20 . 27,77								− 1 . 34 . 6,26	Polaris SP.
57,28	32 . 9 . 58,78	29,900	60,1	59,7	35,94				69 . 57 . 43,00	Arcturus R.
	32 . 9 . 59,00								69 . 57 . 43,22	Arcturus.
	31 . 41 . 20,48	29,974	60,0	61,0	35,28	4,42		15 . 48,80	69 . 44 . 48,42	⊙.
	32 . 12 . 56,90				36,01	4,48			69 . 44 . 47,91	⊙.
	29 . 16 . 46,53	29,980		59,6	32,13	0,70	8,798	13,06	67 . 4 . 39,30	Jupiter.
	26 . 41 . 4,71				28,81	5,67	11,231	12,30	64 . 28 . 23,83	Venus.
	39 . 41 . 27,66	29,994	55,0	53,2	48,18	3,25			77 . 29 . 20,87	Vesta.
58,38	− 2 . 23 . 41,52				2,43				35 . 23 . 24,33	γ Urs. Maj. R.
	− 2 . 23 . 40,40								35 . 23 . 25,45	γ Ursæ Majoris.
60,50	− 39 . 20 . 30,56	30,000	52,7	49,8	47,92				− 1 . 34 . 10,20	Polaris SP. R.
	− 39 . 20 . 25,20								− 1 . 34 . 4,84	Polaris SP.
57,56	62 . 29 . 19,07				1 . 51,83				100 . 18 . 19,18	Spica R.
	62 . 29 . 18,56								100 . 18 . 18,67	Spica.
	61 . 5 . 32,81	30,010	51,8	48,7	1 . 45,81	0,84	9,228	8,58	98 . 54 . 34,64	Saturn.
57,10	32 . 9 . 57,38				36,87				69 . 57 . 42,53	Arcturus R.
	32 . 9 . 55,93								69 . 57 . 41,08	Arcturus.
	32 . 35 . 38,81	29,849	55,7	55,5					70 . 8 . 55,05	☽.
	32 . 35 . 37,92								70 . 8 . 54,16	☽.
	32 . 35 . 37,80				36,78	29 . 30,95		15 . 2,13	70 . 8 . 54,04	☽.
	32 . 35 . 37,59								70 . 8 . 53,83	☽.
	32 . 35 . 37,33								70 . 8 . 53,57	☽.
57,18	67 . 32 . 1,01		46,5	43,8	2 . 21,54				105 . 21 . 30,83	α^2 Libræ R.
	67 . 31 . 59,73								105 . 21 . 29,55	α^2 Libræ.
58,67	− 22 . 36 . 17,22				24,53				15 . 10 . 26,53	β Urs. Min. R.
	− 22 . 36 . 15,52								15 . 10 . 28,23	β Ursæ Minoris.
	30 . 55 . 48,81	30,190	52,3	53,5	35,01	4,32		15 . 48,10	68 . 59 . 15,88	⊙.
	31 . 16 . 54,27	30,274	55,2	56,0	35,42	4,36		15 . 48,00	68 . 48 . 45,61	⊙.
	30 . 45 . 19,43				34,69	4,30			68 . 48 . 46,10	⊙.
	26 . 36 . 38,63		55,8	56,5	29,18	4,14			64 . 24 . 11,95	Mercury.
	29 . 23 . 25,53	30,280	55,7	56,3	32,82	0,70	11,432	14,39	67 . 10 . 51,54	Jupiter.
	27 . 26 . 3,68				30,25	6,19	11,350	13,54	65 . 13 . 22,48	Venus.
57,98	39 . 26 . 4,51		54,9	54,9	48,03				77 . 14 . 0,82	Regulus R.
	39 . 26 . 4,83								77 . 14 . 1,14	Regulus.
58,45	− 10 . 25 . 18,70		54,5	54,0	10,77				27 . 21 . 38,81	α Urs. Maj. R.
	− 10 . 25 . 17,45								27 . 21 . 40,06	α Ursæ Majoris.
58,50	− 72 . 6 . 7,40	30,320	53,0	50,3	3 . 0,84				− 34 . 21 . 59,96	α Cassiop. SP. R.
	− 72 . 6 . 6,05								− 34 . 21 . 58,61	α Cassiopeiæ SP.

Coincidence of Micrometer Wire with fixed Wire = 10r,051. One revolution = 20″,843.
Correction for Runs = − 1″,9. From May 25. = + 1″,7.
Adopted Zenith Point = 195° . 9′ . 57″,17. From May 21. = 195° . 9′ . 57″,82.
Assumed Co-latitude = 37° . 47′ . 8″,28.
No abrupt change of Zenith Point.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
May 26	(*a*) ☽ N.L. M.	250.20	1.15,3	12,2	9,3	13,9	11,8	13,0	7,967	+ 43,44 + 8,92	250.22. 5,01	G.
	☽ N.L. M.	250.20	1.15,3	12,2	9,3	13,9	11,8	13,0	7,800	+ 46,92 + 4,46	250.22. 4,03	G.
	☽ N.L. M.	250.20	1.15,3	12,2	9,3	13,9	11,8	13,0	7,600	+ 51,09	250.22. 3,74	G.
	☽ N.L. M.	250.20	1.15,3	12,2	9,3	13,9	11,8	13,0	7,352	+ 56,26 − 4,46	250.22. 4,45	G.
	☽ N.L. M.	250.20	1.15,3	12,2	9,3	13,9	11,8	13,0	7,166	+ 1. 0,13 − 8,92	250.22. 3,86	G.
	Polaris SP. R. M.	54.30	1.22,1	19,4	14,7	21,0	18,1	19,7	12,672	− 54,64	54.30.24,59	G.
	Polaris SP.	155.45	4.32,9	30,9	28,3	31,6	31,4	30,0			155.49.31,10	G.
	Spica R. M.	312.40	2.25,5	22,4	19,6	23,8	22,0	23,4	14,981	− 1.42,76	312.40.40,16	G.
	Spica	257.35	4.18,5	14,9	14,0	16,5	13,3	15,9			257.39.15,77	G.
	Saturn S.L.	256.10	0.43,2	40,0	39,0	40,8	40,4	40,4			256.10.40,67	G.
May 27	(*b*) ⊙ N.L. M.	225.45	2.18,0	15,3	14,0	15,2	16,1	12,7	16,043	− 2. 4,89	225.45.10,46	G.
	⊙ S.L.	226.15	1.49,0	48,6	44,4	47,5	48,0	43,7			226.16.46,97	G.
	Venus S.L.	222.45	1.21,7	21,9	15,9	21,3	20,0	18,5			222.46.19,95	G.
	Regulus R. M.	335.45	0.18,0	15,3	12,5	18,2	15,2	16,4	14,058	− 1.23,52	335.43.52,43	G.
	Regulus	234.35	1. 5,7	4,0	0,0	3,9	3,2	2,9			234.36. 3,33	G.
	α Urs. Maj. R. M.	25.35	1.14,9	15,6	10,8	16,1	13,4	12,6	12,820	− 57,72	25.35.16,25	G.
	α Ursæ Majoris	184.40	4.41,8	39,8	35,5	39,8	39,3	38,3			184.44.39,35	G.
	Polaris SP. R. M.	54.30	1.11,8	10,0	4,7	11,9	9,3	9,4	12,247	− 45,77	54.30.23,81	G.
	Polaris SP.	155.45	4.32,1	30,8	26,9	32,0	30,8	30,5			155.49.30,77	G.
	Spica R. M.	312.40	2.11,3	8,6	6,4	10,4	8,1	9,3	14,385	− 1.30,33	312.40.38,80	G.
	Spica	257.35	4.17,0	14,2	12,8	16,2	14,2	15,0			257.39.15,15	G.
	(*c*) ☽ N.L.	256.55	1. 5,5	2,9	0,6	4,9	2,5	3,1		+ 8,90	256.56.12,20	G.
	☽ N.L. M.	256.55	1. 5,5	2,9	0,6	4,9	2,5	3,1	9,860	+ 3,98 + 4,45	256.56.11,73	G.
	☽ N.L. M.	256.55	1. 5,5	2,9	0,6	4,9	2,5	3,1	9,702	+ 7,27	256.56.10,57	G.
	☽ N.L. M.	256.55	1. 5,5	2,9	0,6	4,9	2,5	3,1	9,490	+ 11,69 − 4,45	256.56.10,54	G.
	☽ N.L. M.	256.55	1. 5,5	2,9	0,6	4,9	2,5	3,1	9,300	+ 15,65 − 8,90	256.56.10,05	G.
	Saturn N.L.	256. 5	4.31,0	28,9	26,0	29,5	28,8	28,4			256. 9.29,02	G.
	κ Virginis R. M.	313.25	3.32,8	32,2	27,2	32,8	31,2	31,5	10,512	− 9,61	313.28.21,87	G.
	κ Virginis	256.50	1.33,3	31,6	27,2	33,4	30,7	32,2			256.51.31,48	G.
	λ Virginis M.	259.55	2.51,0	49,4	46,3	50,4	49,7	48,0	10,633	− 12,13	259.57.37,17	G.
May 28	⊙ S.L. M.	226. 5	3.46,8	45,3	40,2	46,2	46,3	43,8	15,120	− 1.45,66	226. 6.59,31	G.
	⊙ N.L.	225.35	0.29,0	26,0	21,8	26,8	26,9	24,8			225.35.25,90	G.
	Jupiter S.L.	224.35	0.63,6	61,7	57,4	62,5	62,2	60,8			224.36. 1,42	G.
	(*d*) Procyon R. M.	328.35	2.13,2	12,2	7,4	14,2	12,5	11,2	11,879	− 38,10	328.36.33,80	G.
	Procyon	241.40	3.27,0	23,4	20,3	23,9	24,4	23,2			241.43.23,90	G.
	Venus N.L.	222.55	1.37,0	33,9	28,4	34,7	34,4	33,7			222.56.33,77	G.
	Regulus R. M.	335.45	0.23,6	21,0	17,4	23,2	22,1	22,0	14,345	− 1.29,50	335.43.52,07	G.
	Regulus	234.35	1. 5,9	2,8	0,2	3,3	2,4	3,0			234.36. 2,98	G.
May 30	⊙ S.L. M.	225.50	0.49,2	50,0	44,9	49,1	49,3	47,1	16,340	− 2.11,09	225.48.37,23	G.
	⊙ N.L.	225.15	1.64,0	63,2	59,3	64,6	63,0	59,8			225.17. 2,43	G.
	(*e*) Capella R. M.	8.45	2.14,5	15,8	11,8	16,0	14,0	12,2	11,798	− 36,41	8.46.37,76	G.
	Capella	201.30	3.18,9	17,9	14,2	17,8	16,2	14,7			201.33.16,80	G.
	(*f*) Jupiter S.L.	224.35	3.48,5	49,0	41,4	47,5	47,8	44,8			224.38.46,72	G.
	(*g*) Venus S.L.	223.15	4.35,0	34,0	28,0	33,0	33,0	31,2			223.19.32,62	G.

(*a*) At the five wires: rather unsteady.
(*b*) Very ill-defined limbs, and bad to observe.
(*c*) At the five wires. (*d*) Very unsteady.
(*e*) Extremely faint and unsteady.
(*f*) Exceedingly faint.
(*g*) The South or deficient limb being observed at the fixed wire, the correction for defect of illumination is applied accordingly.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	55 . 12 . 7,19	30,320	51,7	49,0					92 . 28 . 41,43	☽.
	55 . 12 . 6,21								92 . 28 . 40,45	☽.
	55 . 12 . 5,92				1 . 25,01	47 . 58,07		15 . 59,02	92 . 28 . 40,16	☽.
	55 . 12 . 6,63								92 . 28 . 40,87	☽.
	55 . 12 . 6,04								92 . 28 . 40,28	☽.
57,85	− 39 . 20 . 26,77				48,51				− 1 . 34 . 7,00	Polaris SP. R.
	− 39 . 20 . 26,72								− 1 . 34 . 6,95	Polaris SP.
57,97	62 . 29 . 17,66				1 . 53,21				100 . 18 . 19,15	Spica R.
	62 . 29 . 17,95								100 . 18 . 19,44	Spica.
	61 . 0 . 42,85	30,324	48,9	45,9	1 . 47,17	0,83	10,914	8,99	98 . 49 . 28,48	Saturn.
	30 . 35 . 12,64	30,332	55,5	58,3	34,37	4,28		15 . 47,80	68 . 38 . 38,81	☉.
	31 . 6 . 49,15				35,09	4,34			68 . 38 . 40,38	☉.
	27 . 36 . 22,13	30,323	57,1	59,3	30,34	6,30	11,348	13,53	65 . 23 . 40,92	Venus.
57,88	39 . 26 . 5,39	30,300	56,2	58,0	47,77				77 . 14 . 1,44	Regulus R.
	39 . 26 . 5,51								77 . 14 . 1,56	Regulus.
57,80	− 10 . 25 . 18,43			57,3	10,71				27 . 21 . 39,14	α Urs. Maj. R.
	− 10 . 25 . 18,47								27 . 21 . 39,10	α Ursæ Majoris.
57,29	− 39 . 20 . 25,99	30,316	53,6	51,8	48,22				− 1 . 34 . 5,93	Polaris SP. R.
	− 39 . 20 . 27,05								− 1 . 34 . 6,99	Polaris SP.
56,98	62 . 29 . 19,02				1 . 52,56				100 . 18 . 19,86	Spica R.
	62 . 29 . 17,33								100 . 18 . 18,17	Spica.
	61 . 46 . 14,38	30,326	52,8	50,6					98 . 59 . 7,29	☽.
	61 . 46 . 13,91								98 . 59 . 6,82	☽.
	61 . 46 . 12,75				1 . 49,52	52 . 19,29		16 . 14,40	98 . 59 . 5,66	☽.
	61 . 46 . 12,72								98 . 59 . 5,63	☽.
	61 . 46 . 12,23								98 . 59 . 5,14	☽.
	60 . 59 . 31,20				1 . 46,06	0,83	9,229	8,57	98 . 48 . 33,28	Saturn.
56,68	61 . 41 . 35,95				1 . 49,17				99 . 30 . 33,40	κ Virginis R.
	61 . 41 . 33,66								99 . 30 . 31,11	κ Virginis.
	64 . 47 . 39,35				2 . 4,76				102 . 36 . 52,39	λ Virginis.
	30 . 57 . 1,49	30,300	57,4	58,3	34,83	4,32		15 . 47,70	68 . 28 . 52,58	☉.
	30 . 25 . 28,08				34,11	4,25			68 . 28 . 53,92	☉.
	29 . 26 . 3,60	30,280	58,6	58,9	32,71	0,70	11,465	14,74	67 . 13 . 29,15	Jupiter.
58,85	46 . 33 . 24,02				1 . 1,14				84 . 21 . 33,44	Procyon R.
	46 . 33 . 26,08								84 . 21 . 35,50	Procyon.
	27 . 46 . 35,95				30,53	6,42	8,712	14,00	65 . 34 . 22,34	Venus.
57,53	39 . 26 . 5,75	30,260	56,3	55,4	47,95				77 . 14 . 1,98	Regulus R.
	39 . 26 . 5,16								77 . 14 . 1,39	Regulus.
	30 . 38 . 39,41	30,190	58,8	59,6	34,19	4,28		15 . 47,40	68 . 10 . 30,20	☉.
	30 . 7 . 4,61				33,48	4,21			68 . 10 . 29,56	☉.
57,28	6 . 23 . 20,06	30,180	59,2	60,3	6,45				44 . 10 . 34,79	Capella R.
	6 . 23 . 18,98								44 . 10 . 33,71	Capella.
	29 . 28 . 48,90	30,150	60,6	61,0	32,49	0,70	11,444	14,52	67 . 16 . 14,45	Jupiter.
	28 . 9 . 34,80				30,77	6,68	11,373	13,83	65 . 56 . 53,44	Venus,

Coincidence of Micrometer Wire with fixed Wire = 10r,051. One revolution = 20″,843.
Correction for Runs = + 1″,7.
Adopted Zenith Point = 195° . 9′ . 57″,82.
Assumed Co-latitude = 37° . 47′ . 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
May 30	Regulus R. M.	335 . 45	0 . 15,0	14,0	10,2	14,7	13,2	13,3	13,920	− 1 . 20,64	335 . 43 . 52,78	G.
	Regulus	234 . 35	0 . 65,5	63,9	59,4	62,7	63,0	62,3			234 . 36 . 2,85	G.
	(a) δ Urs. Maj. R. M.	20 . 55	0 . 27,4	26,9	22,2	28,0	26,2	25,0	14,605	− 1 . 34,91 − 0,96	20 . 53 . 50,10	G.
	δ Ursæ Majoris	189 . 25	1 . 4,7	3,4	1,0	5,4	2,2	3,0		+ 0,96	189 . 26 . 4,29	G.
	δ Corvi R. M.	307 . 20	4 . 9,8	8,9	5,0	8,9	6,3	5,9	12,670	− 54,60	307 . 23 . 13,10	G.
	δ Corvi	262 . 55	1 . 43,4	42,2	38,8	42,5	39,2	40,9			262 . 56 . 41,27	G.
	Saturn S.L.	256 . 5	2 . 13,0	9,8	7,8	10,7	8,0	9,4			256 . 7 . 9,90	G.
May 31	⊙ N.L. M.	225 . 5	3 . 23,0	20,4	16,2	21,4	20,0	17,3	9,742	+ 6,44	225 . 8 . 26,34	G.
	⊙ S.L.	225 . 35	4 . 63,6	60,8	56,6	60,5	60,2	56,2			225 . 39 . 59,93	G.
	(b) Pollux R. M.	351 . 20	3 . 12,2	10,3	8,8	13,7	12,2	9,8	11,770	− 35,83 − 0,32	351 . 22 . 35,20	G.
	(c) Pollux	218 . 55	2 . 22,0	18,3	13,8	19,4	18,0	18,0		+ 0,73	218 . 57 . 19,11	G.
	Venus N.L.	223 . 30	0 . 56,0	52,2	48,7	54,9	53,0	52,0			223 . 30 . 52,85	G.
	Regulus R. M.	335 . 45	0 . 20,3	17,9	14,5	21,4	18,7	18,6	14,198	− 1 . 26,43	335 . 43 . 52,15	G.
	Regulus	234 . 35	1 . 6,0	2,8	0,2	3,0	2,2	3,7			234 . 36 . 3,05	G.
	α Urs. Maj. R. M.	25 . 35	1 . 14,2	14,3	9,3	16,5	11,0	13,0	12,750	− 56,27	25 . 35 . 16,85	G.
	α Ursæ Majoris	184 . 40	4 . 41,8	38,6	35,3	40,2	38,3	39,2			184 . 44 . 39,17	G.
	(d) Saturn N.L.	256 . 5	1 . 6,6	1,2	2,0	4,2	2,1	3,3			256 . 6 . 3,30	C.
June 2	⊙ S.L. M.	225 . 25	1 . 15,8	15,0	10,0	16,5	12,9	12,2	16,725	− 2 . 19,11	225 . 23 . 54,69	G.
	⊙ N.L.	224 . 50	2 . 19,2	20,0	14,3	20,9	17,4	16,7			224 . 52 . 18,22	G.
	Venus N.L.	223 . 55	0 . 31,1	30,9	24,4	31,4	28,6	28,9			223 . 55 . 29,25	G.
June 4	(e) Polaris SP. R. M.	54 . 30	1 . 19,7	18,3	12,4	20,2	16,0	16,3	12,414	− 49,25	54 . 30 . 27,97	G.
	Polaris SP.	155 . 45	4 . 30,3	27,6	23,5	30,9	28,8	27,7			155 . 49 . 28,38	G.
	η Urs. Maj. R. M.	13 . 5	1 . 50,2	48,9	44,3	51,6	47,2	47,4	14,502	− 1 . 32,77	13 . 5 . 15,60	G.
	η Ursæ Majoris	197 . 10	4 . 42,7	39,2	35,8	42,0	44,3	38,4			197 . 14 . 40,67	G.
	Saturn S.L.	256 . 0	3 . 29,0	24,6	22,2	27,6	22,2	26,0			256 . 3 . 25,47	G.
June 6	⊙ S.L. M.	224 . 55	2 . 42,2	38,6	35,2	40,6	40,0	36,8	13,925	− 1 . 20,74	224 . 56 . 18,31	G.
	⊙ N.L.	224 . 20	4 . 49,8	48,2	42,6	49,2	51,5	43,4			224 . 24 . 47,72	G.
June 8	⊙ S.L. M.	224 . 45	1 . 28,9	30,2	26,7	32,5	24,2	30,2	14,665	− 1 . 36,17	224 . 44 . 52,70	G.
	⊙ N.L.	224 . 10	3 . 26,2	22,9	17,9	25,0	28,5	22,0			224 . 13 . 23,93	G.
	Venus N.L.	225 . 15	0 . 69,0	64,1	59,2	66,4	66,2	60,8			225 . 16 . 4,35	G.
	(f) Arcturus R. M.	343 . 0	0 . 56,8	55,0	51,9	58,4	50,6	53,3	12,660	− 54,38	343 . 0 . 0,00	G.
	Arcturus	227 . 15	4 . 56,3	53,8	49,0	54,5	51,0	52,0			227 . 19 . 53,05	G.
	(g) ε Bootis R. M.	350 . 40	4 . 32,8	31,0	27,9	32,7	25,2	29,0	12,444	− 49,88	350 . 43 . 40,14	G.
	ε Bootis	219 . 35	1 . 18,2	12,7	10,0	16,8	19,9	13,3			219 . 36 . 15,22	G.
	β Urs. Min. R. M.	37 . 45	2 . 25,7	23,3	18,1	26,1	27,5	23,4	13,097	− 1 . 3,49	37 . 46 . 20,66	G.
	β Ursæ Minoris	172 . 30	3 . 39,8	36,3	32,7	39,0	41,5	36,0			172 . 33 . 37,75	G.
June 9	⊙ N.L. M.	224 . 5	3 . 64,6	60,8	57,2	62,6	64,2	58,2	12,263	− 46,11	224 . 8 . 15,39	G.
	⊙ S.L.	224 . 35	4 . 50,4	48,3	43,2	48,8	52,9	45,5			224 . 39 . 48,45	G.
June 11	(h) ⊙ N.L M.	224 . 0	0 . 44,2	40,4	35,3	43,8			14,120	− 1 . 24,81	223 . 59 . 16,02	G.
	⊙ S.L.	224 . 30	0 . 50,8	47,9	40,8	49,9					224 . 30 . 47,25	G.
	Venus N.L.	225 . 55	4 . 19,8	16,9	13,8	18,6					225 . 59 . 16,73	G.
	Polaris SP. R. M.	54 . 30	1 . 48,3	46,1	40,1	47,9			13,715	− 1 . 16,37	54 . 30 . 29,00	G.
	Polaris SP.	155 . 45	4 . 31,2	27,0	24,6	29,5					155 . 49 . 27,53	G.
	η Urs. Maj. R. M.	13 . 5	1 . 23,0	21,3	17,7	25,0			13,140	− 1 . 4,39	13 . 5 . 17,19	G.
	(i) η Ursæ Majoris	197 . 10	4 . 41,0	37,3	34,4	39,7				+ 0,18	197 . 14 . 37,71	G.
	Saturn N.L.	255 . 55	4 . 13,1	9,6	9,0	12,5					255 . 59 . 10,53	G.

(a) Both observations near the 5th wire.
(b) At the 5th wire.
(c) At the comb.
(d) Dancing.
(e) Very good.
(f) The mercury much disturbed by wind.
(g) Too much wind.
(h) Microscopes E and F are omitted, as the wires of E move by starts.
(i) At the 4th wire.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
57,82	39.26. 5,04	30,128	58,2	57,7	47,52				77.14. 0,84	Regulus R.
	39.26. 5,03								77.14. 0,83	Regulus.
57,20	−5.43.52,28		54,6	52,9	5,86				32. 3.10,14	δ Urs. Maj. R.
	−5.43.53,53								32. 3. 8,89	δ Ursæ Majoris.
57,19	67.46.44,72				2.21,91				105.36.14,91	δ Corvi R.
	67.46.43,45								105.36.13,64	δ Corvi.
	60.57.12,08		51,4	49,4	1.45,47	0,83	10,898	8,83	98.45.56,17	Saturn.
	29.58.28,52	30,000	59,5	60,6	33,01	4,19		15.47,30	68. 1.52,92	⊙.
	30.30. 2,11				33,72	4,26			68. 1.52,55	⊙.
57,16	23.47.22,62	29,960	61,7	61,6	25,15				61.34.56,05	Pollux R.
	23.47.21,29								61.34.54,72	Pollux.
	28.20.55,03				30,78	6,81	8,703	14,11	66. 8.41,39	Venus.
57,60	39.26. 5,67	29,938	60,6	60,5	46,96				77.14. 0,91	Regulus R.
	39.26. 5,23								77.14. 0,47	Regulus.
58,01	−10.25.19,03	29,930	59,8	59,4	10,53				27.21.38,72	α Urs. Maj. R.
	−10.25.18,65								27.21.39,10	α Ursæ Majoris.
	60.56. 5,48	29,934	51,5	49,5	1.44,70	0,83	9,163	9,26	98.45. 6,89	Saturn.
	30.13.56,87	29,634	56,9	59,5	33,03	4,23		15.47,00	67.45.46,95	⊙.
	29.42.20,40				32,33	4,16			67.45.43,85	⊙.
	28.45.31,43	29,552	58,7	60,5	30,95	7,09	8,722	13,92	66.33.17,49	Venus.
58,18	−39.20.30,15	29,524	58,4	57,4	46,44				−1.34. 8,31	Polaris SP. R.
	−39.20.29,44								−1.34. 7,60	Polaris SP.
58,14	2. 4.42,22	29,526	57,2	56,0	2,06				39.51.52,56	η Urs. Maj. R.
	2. 4.42,85								39.51.53,19	η Ursæ Majoris.
	60.53.27,65				1.41,74	0,82	10,888	8,73	98.42. 8,12	Saturn.
	29.46.20,49	29,922	59,8	59,4	32,73	4,16		15.46,50	67.18.10,84	⊙.
	29.14.49,90				32,04	4,10			67.18.12,62	⊙.
	29.34.54,88	29,520	61,3	62,8	31,83	4,14		15.46,30	67. 6.44,55	⊙.
	29. 3.26,11				31,16	4,07			67. 6.47,78	⊙.
	30. 6. 6,53	29,510	65,8	65,6	32,31	8,05	8,568	14,82	67.53.53,89	Venus.
56,53	32. 9.57,82	29,536	59,8	57,4	35,66				69.57.41,76	Arcturus R.
	32. 9.55,23								69.57.39,17	Arcturus.
57,68	24.26.17,68		58,4	56,0	25,84				62.13.51,80	ε Bootis R.
	24.26.17,40								62.13.51,52	ε Bootis.
59,21	−22.36.22,84				23,68				15.10.21,76	β Urs. Min. R.
	−22.36.20,07								15.10.24,53	β Ursæ Minoris.
	28.58.17,57	29,660	62,7	63,8	31,13	4,06		15.46,20	67. 1.39,12	⊙.
	29.29.50,63				31,81	4,13			67. 1.40,39	⊙.
	28.49.18,20	29,630	65,4	66,5	30,74	4,04		15.46,00	66.52.39,18	⊙.
	29.20.49,43				31,41	4,11			66.52.39,01	⊙.
	30.49.18,91	29,594	65,8	64,9	33,40	8,60	8,447	16,87	68.37. 8,86	Venus
58,27	−39.20.31,18	29,722	60,0	58,2	46,68				−1.34. 9,58	Polaris SP. R.
	−39.20.30,29								−1.34. 8,69	Polaris SP.
57,45	2. 4.40,63	29,750	57,3	56,3	2,08				39.51.50,99	η Urs. Maj. R.
	2. 4.39,89								39.51.50,25	η Ursæ Majoris.
	60.49.12,71				1.42,50	0,82	9,213	8,74	98.38.11,41	Saturn.

Coincidence of Micrometer Wire with fixed Wire = 10^r,051. One revolution = 20″,843.
Correction for Runs = + 1″,7. On June 11. = − 2″,5.
Adopted Zenith Point = 195°. 9′. 57″,82.
Assumed Co-latitude = 37°. 47′. 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
June 11	β Urs. Min. R. M.	37 . 45	2 . 24,6	21,9	17,9	24,3			12,993	− 1 . 1,32	37 . 46 . 20,56	G.
	β Ursæ Minoris	172 . 30	3 . 37,4	34,9	31,4	37,7					172 . 33 . 34,90	G.
	ι^1 Libræ	266 . 30	0 . 10,7	7,0	6,0	10,0					266 . 30 . 8,40	G.
	✱ Æ. $15^h. 8^m. 10^s.$	254 . 35	1 . 19,4	13,4	13,0	17,8					254 . 36 . 15,75	G.
	o^2 Libræ	261 . 50	3 . 25,3	20,3	20,0	24,2					261 . 53 . 22,03	G.
	(a) μ Bootis	209 . 25	0 . 15,5	11,8	9,8	16,1					209 . 25 . 13,28	G.
	ζ Urs. Min. R. M.	41 . 15	1 . 21,2	19,3	15,5	21,7			15,640	− 1 . 56,50	41 . 14 . 22,75	G.
	ζ Ursæ Minoris	169 . 5	0 . 35,3	32,7	30,0	37,2					169 . 5 . 33,73	G.
June 13	(b) Saturn N.L.	255 . 55	3 . 23,4	19,5	17,2	21,3	20,8	18,9			255 . 58 . 19,55	G.
	(c) α Cor. Bor. R. M.	350 . 10	4 . 18,2	15,3	13,9	18,4	20,8	13,7	11,502	− 30,24	350 . 13 . 45,66	G.
	α Coronæ Borealis	220 . 5	1 . 12,7	8,2	5,0	10,7	7,8	8,3			220 . 6 . 8,57	G.
	α Serpentis R. M.	329 . 50	4 . 25,7	21,2	18,3	25,7	24,4	22,2	8,990	+ 22,11	329 . 54 . 44,19	G.
	α Serpentis	240 . 25	0 . 11,8	6,4	3,7	10,0	7,3	8,3			240 . 25 . 7,88	G.
	ζ Urs. Min. R. M.	41 . 10	4 . 15,6	12,2	8,0	15,0	12,5	11,9	9,514	+ 11,20	41 . 14 . 22,93	G.
	ζ Ursæ Minoris	169 . 5	0 . 35,4	30,7	28,3	36,1	40,0	32,4			169 . 5 . 33,72	G.
June 14	(d) ⊙ S.L. M.	224 . 20	1 . 27,3	24,0	18,4	25,3	20,3	22,6	13,114	− 1 . 3,84	224 . 20 . 18,88	G.
	(e) ⊙ N.L.	223 . 45	3 . 51,8	49,9	43,4	50,0	52,6	45,4		+ 0,35	223 . 48 . 48,48	G.
	(f) Venus N.L.	226 . 40	3 . 54,0	53,9	47,0	54,8	50,0	49,0			226 . 43 . 50,72	G.
	Polaris SP. R. M.	54 . 30	1 . 15,1	12,2	7,0	15,0	7,8	11,2	12,135	− 43,44	54 . 30 . 27,71	G.
	Polaris SP.	155 . 45	4 . 28,0	23,2	19,9	27,0	22,0	24,2			155 . 49 . 23,22	G.
	Spica R. M.	312 . 40	3 . 13,9	9,0	6,4	11,8	7,3	9,2	17,578	− 2 . 36,89	312 . 40 . 32,11	G.
	Spica	257 . 35	4 . 23,3	19,0	16,8	22,3	16,3	19,7			257 . 39 . 18,75	G.
	η Urs. Maj. R. M.	13 . 5	1 . 22,3	19,8	14,0	23,4	17,9	19,5	13,070	− 1 . 2,93	13 . 5 . 16,30	G.
	η Ursæ Majoris	197 . 10	4 . 40,4	35,4	31,2	38,9	33,4	36,0			197 . 14 . 35,02	G.
	Saturn S.L.	255 . 55	3 . 18,8	13,8	11,1	17,4	13,0	14,8			255 . 58 . 14,20	G.
	Arcturus R. M.	343 . 0	0 . 16,0	12,9	10,7	17,7	11,5	12,5	10,698	− 13,49	343 . 0 . 0,03	G.
	(g) Arcturus	227 . 15	4 . 54,3	50,0	45,7	53,0	49,2	52,2			227 . 19 . 50,73	G.
	β Serpentis	231 . 25	0 . 51,2	46,9	41,2	49,2	46,0	47,9			231 . 25 . 46,92	G.
	ε Serpentis	242 . 20	3 . 23,0	16,0	14,0	18,8	16,5	17,5			242 . 23 . 17,00	G.
	γ Serpentis M.	231 . 10	0 . 43,4	37,4	33,0	40,8	37,4	40,0	11,687	− 34,11	231 . 10 . 4,42	G.
	ψ Libræ	261 . 5	3 . 54,0	48,8	45,6	52,2	49,7	49,4			261 . 8 . 49,23	G.
	(h) α Herculis R. M.	337 . 30	2 . 41,4	37,6	33.8	40,0	37,8	37,1	9,848	+ 4,23 − 0,16	337 . 32 . 41,52	C.
	α Herculis	232 . 45	2 . 16,0	9,0	6,5	12,6	7,5	8,0		+ 0,16	232 . 47 . 9,68	C.
	(i) α Lyræ R. M.	1 . 35	0 . 36,3	31,6	28,9	36,0	31,3	33,2	10,744	− 14,45 − 0,48	1 . 35 . 17,85	C.
	α Lyræ	208 . 40	4 . 40,5	33,7	30,3	37,0	33,8	34,2		+ 0,48	208 . 44 . 34,53	C.
June 15	(j) ⊙ N.L.	223 . 45	2 . 27,1	28,8	20,8	27,5	25,6	22,9	13,683	− 1 . 15,71	223 . 46 . 9,29	G.
	⊙ S.L.	224 . 15	2 . 44,2	44,3	36,6	44,2	41,2	39,8			224 . 17 . 41,20	G.
	(k) Venus N.L.	226 . 55	3 . 58,2	58,0	50,4	58,8	55,6	53,2			226 . 58 . 54,97	G.
	η Urs. Maj. R. M.	13 . 5	1 . 19,6	15,7	10,6	19,8	13,7	16,0	12,912	− 59,63	13 . 5 . 16,00	G.
	η Ursæ Majoris	197 . 10	4 . 41,0	37,0	31,2	38,8	36,2	35,9			197 . 14 . 35,82	G.
	Saturn N.L.	255 . 55	2 . 43,0	40,2	35,3	44,0	38,0	40,4			255 . 57 . 39,63	G.
	Arcturus R. M.	343 . 0	0 . 18,4	14,3	11,8	19,8	14,5	15,3	10,813	− 15,88	342 . 59 . 59,75	G.
	(g) Arcturus	227 . 15	4 . 55,7	51,4	47,0	54,5	50,8	52,6			227 . 19 . 52,00	G.
	(l) ζ Urs. Min. R. M.	41 . 10	4 . 13,8	9,5	5,0	13,3	7,2	9,3	9,342	+ 14,78	41 . 14 . 23,68	G.
	ζ Ursæ Minoris	169 . 5	0 . 34,2	28,0	25,4	33,0	30,6	30,4			169 . 5 . 30,17	G.
June 16	⊙ S.L. M.	224 . 15	1 . 23,0	20,8	13,7	22,0	20,4	17,8	12,705	− 55,32	224 . 15 . 24,05	G.
	⊙ N.L.	223 . 40	3 . 57,8	55,8	49,8	57,0	54,4	51,3			223 . 43 . 53,62	G.
	(m) Saturn S.L.	255 . 55	2 . 41,2	38,4	32,9	41,1	37,2	37,2			255 . 57 . 37,50	G.

(a) After this observation the telescope received a slight blow from the lamp falling.

(b) Before this observation I replaced one of the wires of microscope E, which had been accidentally broken in trying to find the cause of irregularity.

(c) Beautiful.

(d) The irregular action of microscope E, being discovered to be owing to pressure on the wires when the eye-piece is pushed in to adapt the focal length to the short-sightedness of the observer; this source of irregularity is guarded against in future. On the 14th the microscope was finally put up, and its position adjusted.

(e) At the 5th wire. Correction for change of declination = + 0″,07; for curvature of path = + 0″,28.

(f) Dancing very much: not good.

(g) No correction for runs.

(h) At 1st and 5th wires. The attached thermometer was put down 67°: it is altered 5° by conjecture.

(i) At 1st and 5th wires.

(j) No defined edge.

(k) The observer never saw the planet so unsteady.

(l) Very cloudy.

(m) Very faint.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
57,73	– 22 . 36 . 22,74	29,780	55,0	54,0	23,98				15 . 10 . 21,56	β Urs. Min. R.
	– 22 . 36 . 22,92								15 . 10 . 21,38	β Ursæ Minoris.
	71 . 20 . 10,58				2 . 48,74				109 . 10 . 7,60	ι^1 Libræ.
	59 . 26 . 17,93				1 . 37,19				97 . 15 . 3,20	∗ Æ. $15^{h}.8^{m}.10^{s}$.
	66 . 43 . 24,21			53,3	2 . 13,19				104 . 32 . 45,68	υ^2 Libræ.
	14 . 15 . 15,46				14,65				52 . 2 . 38,39	μ Bootis.
58,24	– 26 . 4 . 24,93	29,790	54,6	52,6	28,26				11 . 42 . 15,09	ζ Ursæ Min. R.
	– 26 . 4 . 24,09								11 . 42 . 15,93	ζ Ursæ Minoris.
	60 . 48 . 21,73	30,193	63,5	63,5	1 . 42,12	0,81	9,279	8,05	98 . 37 . 19,37	Saturn.
57,12	24 . 56 . 12,16		62,3	61,4	26,74				62 . 43 . 47,18	α Cor. Bor. R.
	24 . 56 . 10,75								62 . 43 . 45,77	α Coronæ Bor.
56,04	45 . 15 . 13,63				57,96				83 . 3 . 19,87	α Serpentis R.
	45 . 15 . 10,06								83 . 3 . 16,30	α Serpentis.
58,33	– 26 . 4 . 25,11		61,8	59,9	28,22				11 . 42 . 14,95	ζ Urs. Min. R.
	– 26 . 4 . 24,10								11 . 42 . 15,96	ζ Ursæ Minoris.
	29 . 10 . 22,64	30,124	67,4	71,0	31,44	4,08		15 . 45,70	66 . 42 . 12,58	⊙.
	28 . 38 . 52,24				30,76	4,02			66 . 42 . 12,96	⊙.
	31 . 33 . 54,48	30,072	69,3	71,8	34,48	9,19	8,402	17,38	69 . 21 . 45,43	Venus.
55,47	– 39 . 20 . 31,47	30,024	66,8	66,9	46,35				– 1 . 34 . 9,54	Polaris SP. R.
	– 39 . 20 . 33,02								– 1 . 34 . 11,09	Polaris SP.
55,43	62 . 29 . 24,13				1 . 48,15				100 . 18 . 20,56	Spica R.
	62 . 29 . 22,51								100 . 18 . 18,94	Spica.
55,66	2 . 4 . 39,94	30,013	66,0	65,2	2,06				39 . 51 . 50,28	η Urs. Maj. R.
	2 . 4 . 38,78								39 . 51 . 49,12	η Ursæ Majoris.
	60 . 48 . 17,96				1 . 41,16	0,81	10,847	8,30	98 . 36 . 58,29	Saturn.
55,38	32 . 9 . 56,21		65,7	64,3	35,74				69 . 57 . 40,23	Arcturus R.
	32 . 9 . 54,49								69 . 57 . 38,51	Arcturus.
	36 . 15 . 50,68	29,992	63,4	62,0	41,84				74 . 3 . 40,80	β Serpentis.
	47 . 13 . 20,76				1 . 1,59				85 . 1 . 30,63	ε Serpentis.
	36 . 0 . 8,18				41,44				73 . 47 . 57,90	γ Serpentis.
	65 . 58 . 52,99				2 . 7,29				103 . 48 . 8,56	ψ Libræ.
55,60	37 . 37 . 14,72	29,990	62,0	59,9	44,13				75 . 25 . 7,13	α Herculis R.
	37 . 37 . 13,44								75 . 25 . 5,85	α Herculis.
56,19	13 . 34 . 38,39	29,968	60,5	59,0	13,85				51 . 22 . 0,52	α Lyræ R.
	13 . 34 . 38,29								51 . 22 . 0,42	α Lyræ.
	28 . 36 . 13,05	29,798	68,2	72,9	30,27	4,01		15 . 45,60	66 . 39 . 33,19	⊙.
	29 . 7 . 44,96				30,93	4,08			66 . 39 . 34,49	⊙.
	31 . 48 . 58,73	29,760	71,0	74,8	34,26	9,40	8,407	17,32	69 . 36 . 49,19	Venus.
55,91	2 . 4 . 40,24	29,738	69,4	70,4	2,02				39 . 51 . 50,54	η Urs. Maj. R.
	2 . 4 . 39,58								39 . 51 . 49,88	η Ursæ Majoris.
	60 . 47 . 43,39				1 . 39,18	0,81	9,298	7,85	98 . 36 . 37,89	Saturn
55,88	32 . 9 . 56,49		68,7	69,3	35,07				69 . 57 . 39,84	Arcturus R.
	32 . 9 . 55,76								69 . 57 . 39,11	Arcturus.
56,93	– 26 . 4 . 27,44		67,4	66,6	27,43				11 . 42 . 13,41	ζ Urs. Min. R.
	– 26 . 4 . 26,07								11 . 42 . 14,78	ζ Ursæ Minoris.
	29 . 5 . 27,81	29,806	69,7	70,6	31,02	4,07		15 . 45,60	66 . 37 . 17,44	⊙.
	28 . 33 . 57,36				30,35	4,01			66 . 37 . 17,58	⊙.
	60 . 47 . 41,26	29,810	66,2	64,4	1 . 40,59	0,81	10,883	8,67	98 . 36 . 20,65	Saturn.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},051. One revolution = 20″,843.
Correction for Runs = – 2″,5. From June 13. = – 5″,7.
Adopted Zenith Point = 195° . 9′ . 57″,82. From June 14. = 195° . 9′ . 56″,24.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Change of Zenith Point by putting up and adjusting the position of Microscope E.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes. A	B	C	D	E	F	Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
June 16	(*a*) Arcturus R. M.	343. 0	0 . 23,5	20,2	16,8	24,8	19,4	20,0	11,013	- 20,05	343. 0. 0,67	G.
	(*b*) Arcturus	227 . 15	4 . 54,7	51,0	47,2	54,3	50,0	51,2			227 . 19 . 51,40	G.
	ε Bootis R. M.......	350 . 40	4 . 10,2	7,5	4,7	10,8	6,2	5,2	11,275	- 25,51	350 . 43 . 41,14	G.
	ε Bootis...............	219 . 35	1 . 17,0	11,4	7,7	14,8	9,6	11,0			219 . 36 . 11,68	G.
	α Serpentis R. M...	329 . 55	1 . 26,0	20,8	17,4	25,3	20,3	22,4	14,698	- 1 . 36,86	329 . 54 . 44,91	G.
	α Serpentis	240 . 25	0 . 12,2	6,3	3,4	10,7	5,7	8,4			240 . 25 . 7,75	G.
	ε Serpentis...........	242 . 20	3 . 22,0	15,9	13,4	19,2	16,5	17,5			242 . 23 . 16,78	G.
	ψ Libræ	261 . 5	3 . 55,0	49,4	46,9	53,2	49,0	50,0			261 . 8 . 49,85	G.
June 17	⊙ N.L. M..........	223 . 40	2 . 29,3	27,8	21,0	30,0	25,2	24,9	11,210	- 24,15	223 . 42 . 1,75	G.
	⊙ S.L.	224 . 10	3 . 38,4	36,2	28,4	37,9	33,7	33,7			224 . 13 . 34,03	G.
June 18	⊙ S.L. M.	224 . 10	3 . 27,8	23,0	17,9	25,0	20,0	21,6	13,552	- 1 . 12,97	224 . 12 . 8,93	G.
	⊙ N.L.	223 . 40	0 . 43,4	38,7	35,2	41,8	35,5	37,9			223 . 40 . 38,62	G.
	Polaris SP. R. M. .	54 . 30	1 . 25,9	22,2	17,6	25,6	17,8	21,7	12,610	- 53,34	54 . 30 . 28,19	G.
	Polaris SP.	155 . 45	4 . 30,5	25,8	22,6	29,1	23,9	25,0			155 . 49 . 25,32	G.
	Spica R. M..........	312 . 40	2 . 17,9	12,9	11,2	16,1	9,5	11,0	14,838	- 1 . 39,78	312 . 40 . 32,90	G.
	Spica	257 . 35	4 . 26,0	21,2	19,0	24,0	15,9	20,6			257 . 39 . 20,28	G.
	η Urs. Maj. R. M...	13. 5	1 . 51,0	49,4	44,4	51,9	46,6	46,7	14,422	- 1 . 31,10	13. 5 . 16,88	G.
	η Ursæ Majoris	197 . 10	4 . 41,0	36,2	33,0	39,7	33,0	35,2			197 . 14 . 35,47	G.
	Saturn S.L.........	255 . 55	2 . 11,7	8,0	6,0	11,3	6,4	7,5			255 . 57 . 8,08	G.
June 20	⊙ S.L. M.	224 . 10	1 . 46,7	42,0	36,6	44,9	39,6	41,0	13,338	- 1 . 8,52	224 . 10 . 32,96	G.
	⊙ N.L...............	223 . 35	3 . 67,2	61,8	59,8	65,0	57,9	60,7			223 . 39 . 1,30	G.
	☽ N.L................	235 . 50	2 . 23,9	18,6	15,7	20,7	15,6	18,0			235 . 52 . 18,32	G.
	Spica R. M..........	312 . 40	2 . 16,3	11,1	10,3	13,0	7,2	10,7	14,652	- 1 . 35,90	312 . 40 . 35,12	G.
	Spica	257 . 35	4 . 23,9	19,0	17,9	22,3	15,8	19,1			257 . 39 . 18,85	G.
	(*c*) η Ursæ Maj. R. M.	13. 5	1 . 39,0	36,2	32,5	38,8	32,0	33,6	13,807	- 1 . 18,29 - 0,18	13. 5 . 16,58	G.
	(*d*) η Ursæ Majoris	197 . 10	4 . 41,1	36,0	33,2	38,9	32,8	35,6		+ 0,72	197 . 14 . 36,10	G.
	Saturn S.L..........	255 . 55	1 . 49,8	46,7	43,3	49,0	43,5	44,8			255 . 56 . 45,85	G.
	Arcturus R. M.	343. 0	0 . 33,9	30,2	29,3	33,7	27,8	29,0	11,385	- 27,80	343. 0. 2,75	G.
	(*e*) Arcturus	227 . 15	4 . 54,0	51,0	47,9	54,8	48,0	50,4			227 . 19 . 51,02	G.
	(*f*) β Urs. Min. R. M. .	37 . 45	2 . 22,0	18,7	15,0	21,6	15,7	17,2	12,700	- 55,22	37 . 46 . 22,71	G.
	β Ursæ Minoris....	172 . 30	3 . 37,8	33,8	30,9	36,4	31,3	32,2			172 . 33 . 33,05	G.
June 23	⊙ N.L. M..........	223 . 40	0 . 14,0	10,7	6,4	12,8	8,1	8,8	11,360	- 27,28	223 . 39 . 42,84	C.
	⊙ S.L.	224 . 10	1 . 17,0	11,2	8,3	13,5	9,2	9,5			224 . 11 . 11,30	C.
June 24	⊙ N.L. M.	223 . 40	0 . 48,8	46,8	40,9	49,2	42,7	43,8	9,969	+ 1,71	223 . 40 . 46,98	G.
	⊙ S.L...............	224 . 10	2 . 22,4	18,5	12,9	21,2	15,0	17,5			224 . 12 . 17,63	G.
	(*c*) η Urs. Maj. R. M. .	13. 5	1 . 15,8	13,8	10,0	16,8	9,7	12,3	12,692	- 55,05 - 0,18	13. 5 . 17,69	G.
	(*d*) η Ursæ Majoris.....	197 . 10	4 . 39,0	34,8	30,9	38,0	32,0	34,2		+ 0,72	197 . 14 . 34,97	G.
	(*g*) Arcturus R. M.	343. 0	0 . 50,9	49,7	46,8	52,8	46,6	47,3	12,218	- 45,17	343. 0. 3,75	C.
	(*e*) Arcturus............	227 . 15	4 . 54,0	50,5	47,5	54,6	47,9	51,1			227 . 19 . 50,93	C.
	(*h*) ☽ N.L.......	260 . 20	1 . 21,2	13,7	13,6	18,0	10,5	15,4		+ 8,46	260 . 21 . 23,69	C.
	☽ N.L. M...........	260 . 20	1 . 21,2	13,7	13,6	18,0	10,5	15,4	9,655	+ 8,26	260 . 21 . 23,49	C.
	☽ N.L. M...........	260 . 20	1 . 21,2	13,7	13,6	18,0	10,5	15,4	9,314	+ 15,37 - 8,46	260 . 21 . 22,14	C.
	ι^1 Libræ...............	266 . 30	0 . 13,2	8,0	8,2	12,4	5,3	8,9			266 . 30 . 9,32	G.
	(*i*) α Cor. Bor. R. M...	350 . 15	0 . 42,0	39,3	37,4	42,8	37,3	37,8	15,471	- 1 . 52,98	350 . 13 . 46,37	G.
	(*c*) α Coronæ Borealis. .	220. 5	1 . 10,8	5,7	3,5	9,0	1,5	5,0		+ 0,08	220. 6. 5,86	G.
	Polaris R. M.	51 . 20	2 . 15,0	11,8	7,7	13,5	6,3	11,0	9,885	+ 3,46	51 . 22 . 14,08	G.
	Polaris...............	158 . 55	2 . 44,2	41,2	39,3	44,8	37,3	40,2			158 . 57 . 40,83	G.

(*a*) Blazing.

(*b*) No correction (it is supposed) for runs: the note was not put down in the observing book.

(*c*) At the 4th wire.

(*d*) At the 5th wire.

(*e*) No correction for runs.

(*f*) Neither observation good.

(*g*) The mercury disturbed by the wind.

(*h*) At the 1st, 3d, and 5th wires.

(*i*) Blur.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
56,04	32. 9.55,57	29,810	66,2	64,4	35,49				69.57.39,34	Arcturus R.
	32. 9.55,16								69.57.38,93	Arcturus.
56,41	24.26.15,10	29,818	65,4	63,5	25,70				62.13.49,08	ε Bootis R.
	24.26.15,44								62.13.49,42	ε Bootis.
56,33	45.15.11,33		64,5	61,8	57,19				83. 3.16,80	α Serpentis R.
	45.15.11,51								83. 3.16,98	α Serpentis.
	47.13.20,54				1. 1,25				85. 1.30,07	ε Serpentis.
	65.58.53,61				2. 6,58				103.48. 8,47	ψ Libræ.
	28.32. 5,51	29,772	68,0	70,3	30,30	4,00		15.45,50	66.35.25,59	⊙.
	29. 3.37,79				30,97	4,07			66.35.27,47	⊙.
	29. 2.12,69	29,650	64,9	66,4	31,05	4,07		15.45,40	66.34. 2,55	⊙.
	28.30.42,38				30,38	4,00			66.34. 2,44	⊙.
56,75	−39.20.31,95	29,590	64,6	63,3	46,00				−1.34. 9,67	Polaris SP. R.
	−39.20.30,92								−1.34. 8,64	Polaris SP.
56,59	62.29.23,34				1.47,35				100.18.18,97	Spica R.
	62.29.24,04								100.18.19,67	Spica.
56,18	2. 4.39,36		62,8	61,6	2,04				39.51.49,68	η Urs. Maj. R.
	2. 4.39,23								39.51.49,55	η Ursæ Majoris.
	60.47.11,84				1.40,39	0,81	10,813	7,94	98.35.51,76	Saturn.
	29. 0.36,72	29,880	61,2	61,4	31,56	4,06		15.45,40	66.32.27,10	⊙.
	28.29. 5,06				30,88	3,99			66.32.25,63	⊙.
	40.42.22,08	29,862	62,6	62,5	48,80	36.10,16		15.11,87	78. 9.20,87	☽.
57,98	62.29.21,12		60,0	59,3	1.49,21				100.18.18,61	Spica R.
	62.29.22,61								100.18.19,10	Spica.
56,34	2. 4.39,66		59,2	58,6	2,08				39.51.50,02	η Urs. Maj. R.
	2. 4.39,86								39.51.50,22	η Ursæ Majoris.
	60.46.49,61				1.41,90	0,80	10,833	8,15	98.35.30,84	Saturn.
56,89	32. 9.53,49				35,97				69.57.37,74	Arcturus R.
	32. 9.54,78								69.57.39,03	Arcturus.
57,88	−22.36.26,47	29,890	59,0	57,1	23,91				15.10.17,90	β Urs. Min. R.
	−22.36.23,19								15.10.21,18	β Ursæ Minoris.
	28.29.46,60	29,684	65,3	66,5	30,39	4,00		15.45,20	66.33. 6,47	⊙.
	29. 1.15,06				31,05	4,06			66.33. 5,13	⊙.
	28.30.50,74	29,630	62,0	62,7	30,58	4,00		15.45,20	66.34.10,80	⊙.
	29. 2.21,39				31,26	4,06			66.34.11,67	⊙.
56,33	2. 4.38,55	29,656	58,0	57,4	2,07				39.51.48,90	η Urs. Maj. R.
	2. 4.38,73								39.51.49,08	η Ursæ Majoris.
57,34	32. 9.52,49	29,696	57,2	56,3	35,93				69.57.36,70	Arcturus R.
	32. 9.54,69								69.57.38,90	Arcturus.
	65.11.27,45								102.23. 9,52	☽.
	65.11.27,25				2. 2,95	53.38,68		16. 9,52	102.23. 9,32	☽.
	65.11.25,90								102.23. 7,97	☽.
	71.20.13,08	29,714	56,9	56,0	2.47,68				109.10. 9,04	ι^1 Libræ.
56,12	24.56. 9,87	29,720	56,4	55,5	26,64				62.43.44,79	α Cor. Bor. R.
	24.56. 9,62								62.43.44,54	α Coronæ Bor.
57,46	−36.12.17,84	29,850	56,5	55,3	42,12				1.34. 8,32	Polaris R.
	−36.12.15,41								1.34.10,75	Polaris.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},051. One revolution = 20″,843.
Correction for Runs = −5″,7. From June 23. = −3″,7.
Adopted Zenith Point = 195°. 9′. 56″,24.
Assumed Co-latitude = 37°. 47′. 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
June 25	⊙ N.L. M.	223.40	3.19,8	20,8	12,4	21,7	16,0	15,4	13,106	−1. 3,67	223.42.13,61	G.
	⊙ S.L.	224.10	3.47,4	48,9	39,0	48,4	42,9	42,6			224.13.44,40	G.
	Venus N.L.	229.25	4.42,4	40,2	35,8	41,0	38,4	37,7			229.29.38,67	G.
	Polaris SP. R. M.	54.30	1.14,9	13,2	8,0	16,0	9,7	11,4	12,182	−44,42	54.30.27,63	G.
	Polaris SP.	155.45	4.28,8	26,1	22,8	28,4	23,7	25,0			155.49.25,25	G.
	η Urs. Maj. R. M.	13. 5	1.16,4	14,6	11,2	17,9	12,0	12,4	12,721	−55,66	13. 5.18,27	G.
	η Urs. Majoris	197.10	4.38,9	34,1	30,9	37,1	32,0	33,1			197.14.33,78	G.
	Saturn N.L.	255.55	1.15,8	13,0	11,3	14,7	10,0	11,9			255.56.12,63	G.
	ι^1 Libræ	266.30	0.10,0	7,3	4,7	10,2	2,4	6,4			266.30. 6,82	G.
	(*a*) ☽ N.L.	266. 5	1.52,2	49,8	47,3	51,0	45,0	47,5		+7,60	266. 6.56,18	G.
	☽ N.L. M.	266. 5	1.52,2	49,8	47,3	51,0	45,0	47,5	9,870	+3,77 +3,80	266. 6.56,15	G.
	☽ N.L. M.	266. 5	1.52,2	49,8	47,3	51,0	45,0	47,5	9,680	+7,73	266. 6.56,31	G.
	☽ N.L. M.	266. 5	1.52,2	49,8	47,3	51,0	45,0	47,5	9,582	+9,78 −3,80	266. 6.54,56	G.
	☽ N.L. M.	266. 5	1.52,2	49,8	47,3	51,0	45,0	47,5	9,372	+14,16 −7,60	266. 6.55,14	G.
	α Herculis R. M.	337.30	4.15,4	13,4	11,0	13,6	12,2	10,3	14,334	−1.29,27	337.32.42,86	G.
	α Herculis	232.45	2.14,2	10,4	7,1	11,8	5,0	10,2			232.47. 9,52	G.
	α Ophiuchi R. M.	335.35	4.21,2	18,3	17,3	19,7	16,8	16,5	11,125	−22,38	335.38.55,39	G.
	α Ophiuchi	234.40	0.60,8	57,2	54,2	58,3	52,0	57,5			234.40.56,55	G.
June 26	(*b*) ☽ N.L.	270.50	1.41,3	40,9	34,6	42,7	36,2	37,9		+5,92	270.51.44,65	G.
	☽ N.L. M.	270.50	1.41,3	40,9	34,6	42,7	36,2	37,9	9,868	+3,81 +2,96	270.51.45,50	G.
	☽ N.L. M.	270.50	1.41,3	40,9	34,6	42,7	36,2	37,9	9,800	+5,23	270.51.43,96	G.
	☽ N.L. M.	270.50	1.41,3	40,9	34,6	42,7	36,2	37,9	9,573	+9,97 −2,96	270.51.45,74	G.
	☽ N.L. M.	270.50	1.41,3	40,9	34,6	42,7	36,2	37,9	9,445	+12,64 −5,92	270.51.45,45	G.
June 27	(*c*) Mars S.L.	229. 0	2.28,3	26,8	21,1	27,4	23,2	24,1		+0,48	229. 2.25,16	C.
June 28	(*d*) ⊙ S.L. M.	224.20	2.42,9	38,3	34,0	40,6	37,7	37,4	15,843	−2. 0,73 +0,33	224.20.37,57	C.
	(*e*) ⊙ N.L.	223.45	4. 9,8	7,4	1,0	9,6	4,9	5,0		+0,47	223.49. 5,95	C.
	(*f*) Venus N.L.	230.10	2.49,9	45,8	40,7	46,1	42,8	45,1			230.12.44,53	C.
	Arcturus R. M.	342.55	4.39,9	37,5	33,4	39,1	37,0	35,7	8,800	+26,07	343. 0. 2,29	C.
	(*g*) Arcturus	227.15	4.54,2	50,7	46,4	52,6	48,5	48,8		+0,33	227.19.49,60	C.
	δ Ophiuchi R. M.	319.40	2.16,6	12,2	9,6	14,5	11,9	12,2	9,518	+11,11	319.42.23,51	C.
	δ Ophiuchi	250.35	2.32,3	26,9	24,1	29,9	28,5	28,7			250.37.27,92	C.
	α Ophiuchi R. M.	335.40	0.32,4	29,4	24,0	33,0	28,1	30,2	14,483	−1.32,38	335.38.57,04	C.
	α Ophiuchi	234.40	0.57,8	53,9	49,6	56,0	54,3	55,8			234.40.54,40	C.
	μ^1 Sagittarii R. M.	301.50	2.53,5	51,6	45,6	51,8	47,3	48,3	5,234	+1.40,40	301.54.29,53	C.
	δ Sagittarii	277. 5	4.43,6	40,9	37,7	42,9	40,2	38,9			277. 9.39,80	C.
	h^2 Sagittarii	272.30	2.54,6	53,2	48,4	53,3	51,7	50,2			272.32.51,33	C.
June 29	(*h*) ζ Ursæ Min. R. M.	41.15	1.24,1	20,9	13,6	24,0	16,6	20,5	15,495	−1.53,47 −0,72	41.14.25,51	C.
	ζ Ursæ Minoris	169. 5	0.28,3	23,2	19,9	28,0	22,4	25,6		+2,90	169. 5.27,38	C.
	(*i*) η Draconis R. M.	24.50	1.33,2	28,7	24,3	31,9	25,8	28,6	13,768	−1.17,48 −0,28	24.50.10,71	C.
	(*j*) η Draconis	185.25	4.45,0	39,7	35,3	44,6	37,0	42,1		+1,68	185.29.42,36	C.

(*a*) Taken at the five wires: limb good and steady.

(*b*) At the five wires: cloudy. 3d wire extremely doubtful.

(*c*) At the 5th wire. Correction for change of N.P.D. = + 0″,28; and that for curvature of path = + 0″,20.

(*d*) At the 1st wire. Correction for change of N.P.D. + 0″,07; and that for curvature of path + 0″,26.

(*e*) At the comb. Correction for change of N.P.D. = − 0″,11; and that for curvature of path = + 0″,58.

(*f*) The tabular semidiameter of Venus is used from this day to Aug. 2.

(*g*) Not good. Halfway between 5th wire and comb.

(*h*) Both observations good: the first at the 4th, the other at the 5th wire.

(*i*) At the 2d wire.

(*j*) Midway between 5th wire and comb. Correction for runs for −20″.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	28.32.17,37	29,930	61,3	62,3	30,95	4,00		15.45,20	66.35.37,80	☉.
	29. 3.48,16				31,63	4,07			66.35.38,80	☉.
	34.19.42,43	29,936	63,8	63,8	38,74	11,80	8,210	19,53	72. 7.37,18	Venus.
56,44	−39.20.31,39	29,970	62,8	62,3	46,69				−1.34. 9,80	Polaris SP. R.
	−39.20.30,99								−1.34. 9,40	Polaris SP.
56,03	2. 4.37,97	29,980	61,6	60,9	2,07				39.51.48,32	η Urs. Maj. R.
	2. 4.37,54								39.51.47,89	η Ursæ Majoris.
	60.46.16,39				1.41,79	0,80	9,300	7,83	98.35.13,49	Saturn.
	71.20.10,58	30,000	58,9	56,0	2.49,25				109.10. 8,11	ι^1 Libræ.
	70.56.59,94								108. 6.35,33	☽.
	70.56.59,91								108. 6.35,30	☽.
	70.57. 0,07				2.45,63	56.42,27		16.23,75	108. 6.35,46	☽.
	70.56.58,32								108. 6.33,71	☽.
	70.56.58,90								108. 6.34,29	☽.
56,19	37.37.13,38	30,028	56,3	51,6	44,92				75.25. 6,58	α Herculis R.
	37.37.13,28								75.25. 6,48	α Herculis.
55,97	39.31. 0,85				48,08				77.18.57,21	α Ophiuchi R.
	39.31. 0,31								77.18.56,67	α Ophiuchi.
	75.41.48,41	30,227	61,2	60,3					112.50.25,54	☽.
	75.41.49,26								112.50.26,39	☽.
	75.41.47,72				3.42,30	58.48,38		16.34,93	112.50.24,85	☽.
	75.41.49,50								112.50.26,63	☽.
	75.41.49,21								112.50.26,34	☽.
	33.52.28,92	30,000	65,3	69,6	37,75	2,37	10,294	2,53	71.40.10,05	Mars.
	29.10.41,33	29,996	74,7	77,3	30,92	4,08		15.45,10	66.42.31,35	☉.
	28.39. 9,71				30,26	4,02			66.42.29,33	☉.
	35. 2.48,29	30,010	73,7	75,2	39,01	12,62		21,30	72.50.44,26	Venus.
55,95	32. 9.53,95	30,096	67,0	65,4	35,75				69.57.37,98	Arcturus R.
	32. 9.53,36								69.57.37,39	Arcturus.
55,72	55.27.32,73	30,128	61,8	60,6	1.23,31				93.16. 4,32	δ Ophiuchi R.
	55.27.31,68								93.16. 3,27	δ Ophiuchi.
55,72	39.30.59,20	30,150	60,0	57,2	47,73				77.18.55,21	α Ophiuchi R.
	39.30.58,16								77.18.54,17	α Ophiuchi.
	73.15.26,71		59,5	58,1	3. 9,69				111. 5.44,68	μ^1 Sagittarii R.
	81.59.43,56				6.29,26				119.53.21,10	δ Sagittarii.
	77.22.55,09	30,158	58,5	57,2	4.12,85				115.14.16,22	h^2 Sagittarii.
56,44	−26. 4.29,27	30,276	63,0	61,9	28,19				11.42.10,82	ζ Urs. Min. R.
	−26. 4.28,86								11.42.11,23	ζ Ursæ Minoris.
56,59	−9.40.14,47				9,82				28. 6.43,99	η Draconis R.
	−9.40.13,88								28. 6.44,58	η Draconis.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},051. One revolution = 20″,843.
Correction for Runs = − 3″,7. From June 27. = − 5″,8.
Adopted Zenith Point = 195°.9′.56″,24.
Assumed Co-latitude = 37°.47′.8″,28.
The coincidence of the micrometer wire with the fixed wire was taken on June 25, and found to be unaltered.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
June 29	(*a*) α Ophiuchi R. M..	335.35	3.55,6	50,1	47,1	52,4	49,0	49,0	9,695	+ 7,42 − 0,13	335.38.57,09	C.
	α Ophiuchi	234.40	0.60,8	55,0	51,9	58,3	51,9	55,8		+ 0,30	234.40.55,73	C.
	τ Sagittarii..........	275.10	1.43,2	38,6	35,2	40,7	36,3	37,7			275.11.38,30	C.
	h^2 Sagittarii	272.30	2.56,5	52,5	49,2	53,7	48,4	50,9			272.32.51,32	C.
	(*b*) ☽ S.L.	274.25	4.51,9	48,8	46,1	50,3	45,5	46,4		− 3,44	274.29.43,79	C.
	☽ S.L. M............	274.25	4.51,9	48,8	46,1	50,3	45,5	46,4	10,268	− 4,52	274.29.42,71	C.
	☽ S.L. M............	274.25	4.51,9	48,8	46,1	50,3	45,5	46,4	10,454	− 8,40 + 3,44	274.29.42,27	C.
	σ Capricorni........	266.55	2.23,2	17,8	15,7	20,2	15,7	17,4			266.57.17,88	C.
June 30	(*c*) ⊙ N.L. M.	223.55	2.26,6	22,9	19,3	25,1	21,7	21,0	14,767	− 1.38,30 + 0,11	223.55.44,11	C.
	(*d*) ⊙ S.L.................	224.25	2.17,5	14,4	10,0	17,0	12,4	12,8		+ 0,17	224.27.13,75	C.
	Venus N.L..........	230.40	0.29,2	26,2	21,5	29,4	24,7	24,7			230.40.25,87	C.
	(*e*) α Urs. Maj. R. M...	25.35	1.11,4	8,8	4,0	12,3	4,9	7,3	12,698	− 55,18 − 0,29	25.35.12,43	C.
	α Ursæ Majoris.....	184.40	4.42,0	38,6	35,1	40,5	36,7	37,2		+ 2,61	184.44.40,06	C.
July 1	Venus N.L..........	230.50	3.53,9	53,8	45,5	55,2	49,6	49,4			230.53.50,50	C.
	Polaris SP. R. M..	54.30	1.62,1	61,3	51,6	63,9	56,5	60,0	15,068 13.18. 5	− 1.44,57 + 14,67	54.30.29,13	C.
	Polaris SP...........	155.45	4.51,0	45,0	41,6	48,6	43,5	46,1	13.21.12	− 22,75	155.49.22,30	C.
	(*f*) Arcturus R. M.....	343. 0	0.54,0	52,7	48,6	56,2	51,9	50,4	12,539	− 51,87 − 0,22	343. 0. 0,04	C.
	Arcturus.............	227.15	4.54,4	49,5	46,3	52,6	48,0	50,9		+ 0,22	227.19.49,57	C.
	(*g*) η Draconis R. M...	24.50	0.60,4	56,9	51,1	60,6	55,6	56,8	12,208	− 44,95	24.50.11,78	C.
	(*h*) η Draconis...........	185.25	4.45,9	38,9	35,5	43,9	38,9	41,8		+ 1,12	185.29.41,04	C.
July 2	(*i*) ⊙ N.L. M.	224. 5	1.65,4	62,6	57,7	64,4	60,2	60,6	18,855	− 3. 3,49 + 0,15	224. 3.58,28	C.
	⊙ S.L.................	224.35	0.34,0	31,5	23,5	34,1	29,3	30,9		+ 0,89	224.35.31,34	C.
	Venus N.L..........	231. 5	1.60,7	57,1	50,8	59,5	54,8	56,0			231. 6.56,10	C.
	Polaris SP. R. M...	54.30	1.47,6	44,8	34,4	47,3	40,7	44,5	13,772 13. 6.20	− 1.17,56 + 1,14	54.30.26,46	C.
	Polaris SP.	155.45	4.35,2	28,7	24,6	32,2	28,0	30,5	13. 7.58	− 2,18	155.49.26,82	C.
	(*j*) Arcturus R. M.	342.55	4.65,9	62,8	58,6	66,5	62,2	61,5	10,135	− 1,75	343. 0. 1,17	C.
	Arcturus.............	227.15	4.55,9	49,9	45,2	53,5	48,1	51,6			227.19.50,70	C.
	(*k*) ε Bootis R. M.......	350.40	3.43,5	40,0	33,4	42,4	38,7	38,0	9,903	+ 3,08 − 0,08	350.43.41,63	C.
	ε Bootis	219.35	1.16,7	9,9	5,5	13,8	7,6	10,3		+ 0,32	219.36.10,72	C.
	α Lyræ R. M.	1.35	0.44,0	41,9	36,8	47,0	38,0	43,0	10,959	− 18,93	1.35.22,72	C.
	(*l*) α Lyræ........... ...	208.40	4.34,5	29,7	24,8	32,1	25,2	28,8		+ 1,08	208.44.29,40	C.
	β Lyræ R. M.......	356. 5	4.13,0	9,8	8,0	14,9	6,4	8,1	13,552	− 1.12,97	356. 7.56,25	C.
	(*l*) β Lyræ	214.10	1.60,2	55,6	51,8	58,6	51,4	55,4		+ 0,88	214.11.56,01	C.
July 3	(*m*) Mars S.L............	227.55	3.43,3	39,5	34,5	41,2	36,0	36,2		+ 1,20	227.58.38,95	C.
	(*f*) α Orionis R. M.....	330.15	4.56,0	53,6	45,9	57,5	50,3	51,0	8,777	+ 26,55 − 0,08	330.20.17,90	C.
	α Orionis	239.55	4.39,3	34,7	29,8	36,2	33,6	33,8		+ 0,08	239.59.33,76	C.

(*a*) At first wire and comb.
(*b*) At 1st, 3d, and 5th wires.
(*c*) At the 2d wire. Correction for change of N.P.D. = + 0″,05; for curvature of path + 0″,06.
(*d*) This limb ill-defined, and unsteady. Taken at 5th wire. Correction for change of N.P.D. = − 0″,09; for curvature of path = + 0″,26.
(*e*) At 2d wire and comb. (*f*) At 1st and 5th wires.
(*g*) The micrometer reading put down, is diminished by two revolutions. (*h*) At 5th wire.

(*i*) Hurried observation. The N.L. at 5th wire, or two intervals; the S.L. at a distance from the middle wire equal to 4¼ intervals. The corrections for change of N.P.D. are respectively − 0″,11 and − 0″,26, and for curvature of path, + 0″,26 and + 1″,15.
(*j*) Came too near the fixed wire. No correction for runs in either observation.
(*k*) At 2d and 5th wires. (*l*) At the comb.
(*m*) Very unsteady and faint. The observation not good; taken at the comb. Correction for change of N.P.D. = + 0″,72; for curvature of path = + 0″,48.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
56,41	39 . 30 . 59,15	30,226	61,5	59,8	47,61				77 . 18 . 55,04	α Ophiuchi R.
	39 . 30 . 59,49								77 . 18 . 55,38	α Ophiuchi.
	80 . 1 . 42,06		59,8	57,4	5 . 33,25				117 . 54 . 23,59	τ Sagittarii.
	77 . 22 . 55,08		59,5	58,0	4 . 12,99				115 . 14 . 16,35	h^2 Sagittarii.
	79 . 19 . 47,55								115 . 55 . 24,72	☽.
	79 . 19 . 46,47				4 . 57,95	59 . 50,92		16 . 38,14	115 . 55 . 23,64	☽.
	79 . 19 . 46,03								115 . 55 . 23,20	☽.
	71 . 47 . 21,64		59,0	56,0	2 . 54,17				109 . 37 . 24,09	σ Capricorni.
	28 . 45 . 47,87	30,196	66,6	68,6	31,13	4,03		15 . 45,10	66 . 49 . 8,35	⊙.
	29 . 17 . 17,51				31,81	4,10			66 . 49 . 8,40	⊙.
	35 . 30 . 29,63	30,166	67,0	68,7	40,40	13,18		21,90	73 . 18 . 27,03	Venus.
56,25	– 10 . 25 . 16,19	30,138	67,2	68,1	10,42				27 . 21 . 41,67	α Urs. Maj. R.
	– 10 . 25 . 16,18								27 . 21 . 41,68	α Ursæ Majoris.
	35 . 43 . 54,26	30,034	69,6	76,2	39,98	13,47		22,30	73 . 31 . 51,35	Venus.
55,72	– 39 . 20 . 32,89	30,024	70,8	75,7	45,57				– 1 . 34 . 10,18	Polaris SP. R.
	– 39 . 20 . 33,94								– 1 . 34 . 11,23	Polaris SP.
54,80	32 . 9 . 56,20	30,030	71,4	74,3	35,07				69 . 57 . 39,55	Arcturus R.
	32 . 9 . 53,33								69 . 57 . 36,68	Arcturus.
56,41	– 9 . 40 . 15,54	30,054	70,3	71,4	9,57				28 . 6 . 43,17	η Draconis R.
	– 9 . 40 . 15,20								28 . 6 . 43,51	η Draconis.
	28 . 54 . 2,04	30,076	75,2	76,2	30,72	4,05		15 . 45,10	66 . 57 . 22,09	⊙.
	29 . 25 . 35,10				31,39	4,11			66 . 57 . 25,56	⊙.
	35 . 56 . 59,86	30,084	75,5	75,6	40,39	13,75		22,60	73 . 44 . 57,38	Venus.
56,64	– 39 . 20 . 30,22	30,076	73,5	74,2	45,76				– 1 . 34 . 7,70	Polaris SP. R.
	– 39 . 20 . 29,42								– 1 . 34 . 6,90	Polaris SP.
55,94	32 . 9 . 55,07	30,078	72,7	71,7	35,29				69 . 57 . 38,64	Arcturus R.
	32 . 9 . 54,46								69 . 57 . 38,03	Arcturus.
56,18	24 . 26 . 14,61	30,082	71,6	69,6	25,61				62 . 13 . 48,50	ε Bootis R.
	24 . 26 . 14,48								62 . 13 . 48,37	ε Bootis.
56,06	13 . 34 . 33,52	30,102	61,7	59,5	13,90				51 . 21 . 55,70	α Lyræ R.
	13 . 34 . 33,16								51 . 21 . 55,34	α Lyræ.
56,13	19 . 1 . 59,99				19,86				56 . 49 . 28,13	β Lyræ R.
	19 . 1 . 59,77								56 . 49 . 27,91	β Lyræ.
	32 . 48 . 42,71	30,152	66,5	68,7	36,50	2,33	10,315	2,75	70 . 36 . 22,41	Mars.
55,83	44 . 49 . 38,34	30,174	75,2	74,1	55,66				82 . 37 . 42,28	α Orionis R.
	44 . 49 . 37,52								82 . 37 . 41,46	α Orionis.

Coincidence of Micrometer Wire with fixed Wire = $10^{r},051$. One revolution = 20″,843.
Correction for Runs = – 5″,8.
Adopted Zenith Point = 195° . 9′ . 56″,24.
Assumed Co-latitude = 37° . 47′ . 8″,28.

July 1. $6\frac{1}{2}^{h}$, Molyneux fast on Hardy $1^{m}.32^{s},5$, and on July 3. 23^{h}, $1^{m}.38^{s}$. Hence Molyneux is inferred to be fast on Hardy July 2. $6\frac{1}{2}^{h}$, by $1^{m}.34^{s},5$.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
July 4	(*a*) ⊙ N.L. M.	224.15	1.34,0	31,0	24,4	32,6	28,0	28,9	17,772	−2.40,93 +0,13	224.13.48,73	C.
	⊙ S.L.	224.45	2.65,2	62,6	56,0	64,5	59,6	58,7	17,772	−2.40,93 +0,12	224.45.19,71	C.
	(*b*) Venus N.L.	231.30	2.12,9	11,9	4,0	13,4	8,3	7,5		−0,13	231.32. 9,12	C.
	(*c*) β Lyræ R. M.	356.10	0.64,0	59,2	58,0	65,1	57,6	60,0	18,799	−3. 2,33 −0,10	356. 7.58,02	C.
	β Lyræ	214.10	1.60,5	52,5	51,3	57,1	50,0	54,2		+0,39	214.11.54,29	C.
	δ Aquilæ R. M.	325.45	0.60,3	58,9	54,5	61,0	55,4	58,0	10,517	−9,72	325.45.48,11	C.
	δ Aquilæ	244.30	4.13,0	5,3	3,0	9,1	2,4	6,7			244.34. 5,78	C.
July 5	Venus N.L.	231.40	4.18,8	11,6	8,1	14,8	11,0	11,5			231.44.11,52	C.
	(*d*) α Lyræ R. M.	1.35	0.54,1	49,5	45,5	53,4	46,9	49,9	11,320	−26,45 −0,12	1.35.23,15	C.
	α Lyræ	208.40	4.37,3	29,7	25,8	32,8	27,2	30,1		+0,48	208.44.30,05	C.
July 6	Polaris SP. R. M.	54.30	1.45,1	40,5	33,0	43,3	36,7	40,2	13,579 13. 8.30	−1.13,54 +2,53	54.30.28,46	C.
	Polaris SP.	155.45	4.36,7	29,6	25,4	33,2	27,7	30,8	13.11. 2	−4,73	155.49.24,92	C.
	(*e*) Arcturus R. M.	343. 0	0.15,0	10,2	7,8	14,6	8,3	10,7	10,548	−8,49 −0,22	343. 0. 2,36	C.
	(*f*) Arcturus	227.15	4.53,2	48,9	44,2	51,7	44,8	49,3		+0,22	227.19.48,87	C.
	β Urs. Min. R. M.	37.45	2.23,4	18,3	13,1	22,1	14,8	18,6	12,716	−55,55	37.46.22,37	C.
	(*g*) β Ursæ Minoris	172.30	3.34,5	26,9	24,5	33,0	25,9	28,7		+2,21	172.33.30,41	C.
	(*c*) β^1 Scorpii R. M.	303.35	1.46,3	40,3	36,9	43,8	37,0	41,7	4,002	+2. 6,08 +0,05	303.38.46,78	C.
	β^1 Scorpii	266.40	1.12,4	6,2	4,1	10,5	3,4	8,3		−0,21	266.41. 7,02	C.
	(*h*) ☽ N.L.	236.25	1.11,0	4,4	2,3	8,4	1,5	4,8		−7,40	236.25.57,78	C.
	☽ N.L. M.	236.25	1.11,0	4,4	2,3	8,4	1,5	4,8	10,372	−6,69	236.25.58,49	C.
	☽ N.L. M.	236.25	1.11,0	4,4	2,3	8,4	1,5	4,8	10,920	−18,11 +7,40	236.25.54,47	C.
July 7	(*i*) ⊙ S.L.	225. 0	3.10,0	5,3	2,2	9,3	1,6	3,0			225. 3. 4,88	C.
	ζ Urs. Min. R. M.	41.15	1.17,0	11,4	7,5	15,2	9,3	8,1	15,056	−1.44,32	41.14.26,96	C.
	(*j*) ζ Ursæ Minoris	169. 5	0.31,0	22,5	21,3	29,7	23,2	26,9		+0,72	169. 5.26,44	C.
	(*k*) α Herculis R. M.	337.30	2.26,7	21,6	18,7	25,7	19,2	22,0	9,021	+21,47 −0,16	337.32.43,36	C.
	α Herculis	232.45	2.11,4	4,5	1,9	8,9	2,1	5,8		+0,16	232.47. 5,69	C.
July 8	(*l*) ⊙ N.L. M.	224.40	0.26,0	19,7	17,2	25,0	17,1	20,3	15,977	−2. 3,53 +0,08	224.38.16,85	C.
	(*m*) Venus N.L.	232.15	2.59,4	53,9	49,7	58,0	51,2	53,4			232.17.53,93	C.
July 11	(*n*) ⊙ S.L. M.	225.35	0.26,6	21,1	15,2	24,0	19,7	20,7	19,003	−3. 6,58	225.32.14,55	C.
	⊙ N.L.	225. 0	0.46,0	42,2	35,0	44,9	37,9	41,0			255. 0.41,02	C.
	Venus N.L.	232.45	2.36,7	33,6	25,6	36,7	30,0	33,3			232.47.32,12	C.
	(*o*) Arcturus R. M.	342.55	4.18,4	12,8	10,3	17,1	13,2	12,4	7,733	+48,32	343. 0. 1,45	C.
	Arcturus	227.15	4.54,5	50,0	43,8	52,9	46,8	48,5			227.19.48,38	C.
	(*k*) α Herculis R. M.	337.30	2.28,3	23,9	18,4	27,7	20,3	23,9	9,000	+21,90 −0,16	337.32.44,97	C.
	α Herculis	232.45	2.12,5	5,1	0,3	8,7	1,3	6,4		+0,16	232.47. 5,43	C.
	(*d*) α Lyræ R. M.	1.35	1.25,9	19,5	16,1	25,0	17,7	20,4	12,744	−56,14 −0,12	1.35.24,22	C.
	α Lyræ	208.40	4.33,5	26,8	21,3	30,1	23,3	26,8		+0,48	208.44.26,48	C.

(*a*) The N.L. at 2d wire and S.L. at 5th wire: the latter taken by mistake on the micrometer wire. Corrections for change of N.P.D. are respectively + 0″,07 and − 0″,13, and for curvature of path + 0″,06 and + 0″,25.

(*b*) Taken at 5th wire, the clamp not acting properly. Correction for change of N.P.D. = − 0″,30, and for curvature of path + 0″,17.

(*c*) At 2d and 5th wires.

(*d*) At 2d and 5th wires. Cloudy. (*e*) At 1st wire.

(*f*) At 5th wire. No correction for runs.

(*g*) At 5th wire. (*h*) At 1st, 3d, and 5th wires.

(*i*) Cloudy. Taken at the 4th wire. The corrections for change of N.P.D. and curvature of path destroy each other.

(*j*) At 4th wire.

(*k*) At 1st and 5th wires.

(*l*) Cloudy. Taken at 5th wire without the dark glass: not altogether satisfactory. Correction for change of N.P.D. = − 0″,17, and for curvature of path = + 0″,25. (*m*) Extremely unsteady.

(*n*) Taken at 2d and 4th wires; but the amount of the corrections is insensible.

(*o*) Blur: bisection doubtful.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	29 . 3 . 52,49	30,150	72,2	75,5	31,05	4,07		15 . 45,10	67 . 7 . 12,85	⊙.
	29 . 35 . 23,47				31,72	4,13			67 . 7 . 14,24	⊙.
	36 . 22 . 12,88	30,132	71,8	77,3	40,97	14,33		23,30	74 . 10 . 11,10	Venus.
56,16	19 . 1 . 58,22	30,092	66,4	65,2	19,63				56 . 49 . 26,13	β Lyræ R.
	19 . 1 . 58,05								56 . 49 . 25,96	β Lyræ.
56,95	49 . 24 . 8,13	30,096		64,1	1 . 6,42				87 . 12 . 22,83	δ Aquilæ R.
	49 . 24 . 9,54								87 . 12 . 24,24	δ Aquilæ.
	36 . 34 . 15,28	30,006	75,5	79,1	40,95	14,62		23,70	74 . 22 . 13,59	Venus.
56,60	13 . 34 . 33,09	29,950	69,0	68,0	13,60				51 . 21 . 54,97	α Lyræ R.
	13 . 34 . 33,81								51 . 21 . 55,69	α Lyræ.
56,69	− 39 . 20 . 32,22	30,022	69,3	68,3	46,21				− 1 . 34 . 10,15	Polaris SP. R.
	− 39 . 20 . 31,32								− 1 . 34 . 9,25	Polaris SP.
55,62	32 . 9 . 53,88	30,038	68,0	66,5	35,61				69 . 57 . 37,77	Arcturus R.
	32 . 9 . 52,63								69 . 57 . 36,52	Arcturus.
56,39	− 22 . 36 . 26,13	30,050	66,0	63,7	23,72				15 . 10 . 18,43	β Urs. Min. R.
	− 22 . 36 . 25,83								15 . 10 . 18,73	β Ursæ Minoris.
57,06	71 . 31 . 9,46	30,064	63,5	61,9	2 . 49,36				109 . 21 . 7,10	β^1 Scorpii R.
	71 . 31 . 10,78								109 . 21 . 8,42	β^1 Scorpii.
	41 . 16 . 1,54	30,112	62,5	60,8	50,35	36 . 12,78		15 . 2,74	78 . 42 . 50,13	☽.
	41 . 16 . 2,25								78 . 42 . 50,84	☽.
	41 . 15 . 58,23								78 . 42 . 46,82	☽.
	29 . 53 . 8,64	30,116	66,7	67,5	32,57	4,17		15 . 45,10	67 . 25 . 0,22	⊙.
56,70	− 26 . 4 . 30,72	30,096	63,5	60,5	28,10				11 . 42 . 9,46	ζ Ursæ Min. R.
	− 26 . 4 . 29,80								11 . 42 . 10,38	ζ Ursæ Minoris.
54,53	37 . 37 . 12,88	30,094	61,2	58,4	44,41				75 . 25 . 5,57	α Herculis R.
	37 . 37 . 9,45								75 . 25 . 2,14	α Herculis.
	29 . 28 . 20,61	30,176	65,8	66,2	32,17	4,12		15 . 45,10	67 . 31 . 42,04	⊙.
	37 . 7 . 57,69	30,184	66,1	67,2	43,02	15,46		24,80	74 . 55 . 58,33	Venus.
	30 . 22 . 18,31	29,956	74,2	75,6	32,52	4,24		15 . 45,20	67 . 54 . 9,67	⊙.
	29 . 50 . 44,78				31,84	4,17			67 . 54 . 5,93	⊙.
	37 . 37 . 35,88	29,948	75,7	77,2	42,61	16,28		25,70	75 . 25 . 36,16	Venus.
54,92	32 . 9 . 54,79	29,844	75,4	75,1	34,79				69 . 57 . 37,86	Arcturus R.
	32 . 9 . 52,14								69 . 57 . 35,21	Arcturus.
55,20	37 . 37 . 11,27	29,782	69,5	68,2	43,11				75 . 25 . 2,66	α Herculis R.
	37 . 37 . 9,19								75 . 25 . 0,58	α Herculis.
55,35	13 . 34 . 32,02	29,738	67,5	66,3	13,55				51 . 21 . 53,85	α Lyræ R.
	13 . 34 . 30,24								51 . 21 . 52,07	α Lyræ.

Coincidence of Micrometer Wire with fixed Wire = $10^{r},051$. One revolution = 20″,843.
Correction for Runs = − 5″,8. For Venus July 5. − 7″,9. Afterwards, − 6″,1. From July 7. = − 3″,3. From July 11. = − 6″,4.
Adopted Zenith Point = 195° . 9′ . 56″,24.
Assumed Co-latitude = 37° . 47′ . 8″,28.
The Sun had been shining on the Circle at 12 o'clock, July 5. The runs were taken at $2\frac{1}{2}^{h}$, and again at 7^{h} the same day.
July 6. 6^{h}, Molyneux fast on Hardy $1^{m}.43^{s}$.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
July 12	(*a*) ε Urs. Min. R. M.	45 . 15	1 . 52,9	47,5	42,9	50,5	42,0	46,7	17,137	− 2 . 27,70 − 4,44	45 . 14 . 14,56	C.
	ε Ursæ Minoris	165 . 5	0 . 32,6	24,9	23,3	30,3	22,4	27,6	17 . 9 . 58	+ 9,17	165 . 5 . 35,92	C.
	(*b*) Mars center	226 . 35	0 . 52,7	46,9	44,0	51,1	43,2	54,1		+ 0,55	226 . 35 . 49,05	C.
July 13	(*c*) ⊙ S.L. M.	225 . 50	1 . 22,7	15,8	14,1	20,5	13,7	16,5	16,358	− 2 . 11,46	225 . 49 . 5,47	C.
	⊙ N.L.	225 . 15	2 . 39,8	34,5	30,4	38,0	30,9	32,8			225 . 17 . 33,87	C.
	Venus N.L.	233 . 0	4 . 51,5	47,3	42,9	50,5	44,5	45,9			233, 4 . 46,08	C.
July 15	Mars N.L.	226 . 10	1 . 45,1	40,2	37,3	43,6	37,9	39,1			226 . 11 . 40,27	C.
July 16	Venus N.L.	233 . 25	1 . 32,1	26,1	23,5	30,2	23,8	26,4			233 . 26 . 26,78	C.
	β Urs. Min. R. M.	37 . 45	2 . 30,8	26,7	21,0	31,6	22,6	27,2	13,265 14 . 51 . 40	− 1 . 6,99 − 0,18	37 . 46 . 19,10	C.
	β Ursæ Minoris	172 . 30	3 . 28,2	22,3	20,6	27,2	20,5	22,7	14 . 53 . 50	+ 1,11	172 . 33 . 24,16	C.
July 17	Mars N.L.	225 . 55	1 . 34,4	28,8	26,2	32,6	27,0	29,6			225 . 56 . 29,53	C.
	(*d*) Capella R.	8 . 45	1 . 32,5	29,6	25,9	32,9	26,8	28,0			8 . 46 . 29,05	C.
	(*e*) Capella	201 . 30	3 . 19,3	14,0	11,8	17,3	10,5	12,9		+ 0,62	201 . 33 . 14,40	C.
	α Orionis R. M.	330 . 15	4 . 63,1	58,9	56,2	63,5	54,3	57,9	9,179	+ 18,17	330 . 20 . 16,37	C.
	α Orionis	239 . 55	4 . 31,6	25,7	22,7	28,8	24,2	26,7			239 . 59 . 25,92	C.
July 18	(*f*) ☽ N.L.	239 . 50	3 . 53,4	49,1	44,4	50,9	46,3	48,2		+ 7,92	239 . 53 . 56,05	C.
	☽ N.L. M.	239 . 50	3 . 53,4	49,1	44,4	50,9	46,3	48,2	9,745	+ 6,38	239 . 53 . 54,50	C.
	☽ N.L. M.	239 . 50	3 . 53,4	49,1	44,4	50,9	46,3	48,2	9,314	+ 15,37 − 7,92	239 . 53 . 55,57	C.
	Polaris SP. R. M.	54 . 30	1 . 55,8	52,3	45,8	55,7	49,0	51,4	14,460 13 . 7 . 30	− 1 . 31,90 + 1,61	54 . 30 . 21,08	C.
	(*g*) Polaris SP.	155 . 45	4 . 45,9	42,5	38,2	45,6	40,2	41,0	13 . 21 . 15	− 19,69	155 . 49 . 21,81	C.
	Arcturus R. M.	343 . 0	0 . 37,0	33,2	30,4	37,7	33,0	32,4	11,741	− 35,23	342 . 59 . 58,64	C.
	(*e*) Arcturus	227 . 15	4 . 47,7	44,3	39,3	47,0	41,2	41,7		+ 0,22	227 . 19 . 43,02	C.
	δ Urs. Min. R. M.	49 . 30	3 . 18,4	13,8	9,4	17,1	10,0	12,9	14,402 18 . 24 . 40	− 1 . 30,68 − 0,37	49 . 31 . 42,03	C.
	δ Ursæ Minoris	160 . 45	2 . 66,3	61,7	59,1	65,9	57,3	60,9	18 . 27 . 30	+ 0,13	160 . 48 . 1,53	C.
	α Aquilæ R. M.	331 . 20	4 . 19,3	12,7	12,2	17,3	10,8	12,9	9,642	+ 8,53	331 . 24 . 22,06	C.
	(*h*) α Aquilæ	238 . 50	5 . 25,7	17,7	16,6	21,8	14,8	20,9		+ 0,36	238 . 55 . 19,09	C.
July 20	(*i*) λ Urs. Min. R. M.	51 . 45	0 . 44,5	61,9	48,6	67,9	51,4	59,9	12.345 20 . 24 . 45	− 47,82 − 0,12	51 . 45 . 7,63	C.
	λ Ursæ Minoris	158 . 30	4 . 20,7	39,5	27,1	44,9	29,0	35,6	20 . 27 . 20	+ 0,03	158 . 34 . 32,11	C.
	α Cygni R. M.	7 . 35	3 . 31,8	53,0	37,8	56,1	41,8	47,0	9,558	+ 10,28	7 . 38 . 54,26	G.
	(*e*) α Cygni	202 . 40	0 . 32,0	51,8	36,3	56,0	39,2	46,1		+ 0,59	202 . 40 . 44,04	G.
	α Cephei R. M.	24 . 50	0 . 42,8	63,0	48,4	67,6	50,3	57,4	11,830	− 37,08	24 . 50 . 17,70	G.
	α Cephei	185 . 25	4 . 10,0	30,4	15,9	35,5	17,3	25,9			185 . 29 . 21,82	G.
	Pallas	232 . 45	1 . 41,3	63,0	46,0	66,0	48,8	56,3			232 . 46 . 53,27	G.
	(*j*) ∗Æ.21^{h}.19^{m}.45^{s}.M.	232 . 45	1 . 41,3	63,0	46,0	66,0	48,8	56,3	12,309	− 47,07	232 . 46 . 6,20	G.
July 21	⊙ N.L M.	226 . 40	0 . 43,4	64,9	51,1	69,8	55,3	59,7	14,012	− 1 . 22,56	226 . 39 . 34,66	G.
	⊙ S.L.	227 . 10	0 . 54,2	74,7	60,2	80,8	64,2	68,8			227 . 11 . 6,97	G.
	α Lyræ R. M.	1 . 35	1 . 28,9	51,8	36,3	55,2	40,9	45,0	13,980	− 1 . 21,90	1 . 35 . 20,85	G.
	α Lyræ	208 . 40	4 . 4,8	26,1	11,4	30,2	14,4	20,2			208 . 44 . 17,18	G.
	β Lyræ R. M.	356 . 5	3 . 16,0	37,5	23,5	42,3	28,2	32,4	11,730	− 35,00	356 . 7 . 54,43	G.
	(*e*) β Lyræ	214 . 10	1 . 30,0	49,8	33,4	54,0	37,9	44,7		+ 0,39	214 . 11 . 41,76	G.
	β Aquilæ R. M.	328 . 55	3 . 11,0	31,5	16,7	36,0	20,3	26,8	10,810	− 15,82	328 . 58 . 7,36	G.
	β Aquilæ	241 . 20	1 . 18,8	37,0	22,8	40,9	25,4	34,6			241 . 21 . 29,68	G.

(*a*) At 5th wire. Uncertain bisection on account of the wind.

(*b*) Between 5th wire and comb. Cloudy. Correction for change of N.P.D. + 0″,26, and for curvature of path + 0″,29.

(*c*) At 2d and 5th wires. The corrections are of very small amount.

(*d*) The star came on fixed wire: a pretty good bisection.

(*e*) At the 5th wire.

(*f*) At 1st, 3d, and 5th wires. Limb exceedingly faint: observation at 1st wire doubtful.

(*g*) The observation was delayed by a cloud passing over. The correction for time was obtained by special calculation.

(*h*) Just beyond the comb: equivalent to four intervals.

(*i*) The screws for adjusting the position of the axis of the circle were moved before this observation.

(*j*) The observer was doubtful whether this or the preceding star was Pallas. It appears that it followed Pallas about two intervals.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
55,24	−30 . 4 . 18,32	29,798	58,5	56,9	33,16				7 . 42 . 16,80	ε Urs. Min. R.
	−30 . 4 . 20,32								7 . 42 . 14,80	ε Ursæ Minoris.
	31 . 25 . 52,81	29,898	61,8	61,6	34,79	2,28			69 . 13 . 33,60	Mars.
	30 . 39 . 9,23	29,882	65,5	66,5	33,39	4,27		15 . 45,30	68 . 11 . 1,33	☉.
	30 . 7 . 37,63				32,70	4,21			68 . 10 . 59,70	☉.
	37 . 54 . 49,84	29,870	67,7	68,6	43,67	16,77		26,40	75 . 42 . 51,42	Venus.
	31 . 1 . 44,03	29,608	58,5	58,8	34,10	2,27	9,807	2,54	68 . 49 . 26,68	Mars.
	38 . 16 . 35,49	29,666	61,7	63,6	44,38	17,43		27,20	76 . 4 . 37,92	Venus.
51,63	−22 . 36 . 27,81	29,690	61,4	60,4	23,60				15 . 10 . 16,87	β Urs. Min. R.
	−22 . 36 . 27,13								15 . 10 . 17,55	β Ursæ Minoris.
	30 . 46 . 38,24	29,972	60,2	59,5	34,13	2,26	9,805	2,57	68 . 34 . 20,96	Mars.
51,73	6 . 23 . 22,24		60,5	61,0	6,40				44 . 10 . 36,92	Capella R.
	6 . 23 . 23,11								44 . 10 . 37,79	Capella.
51,15	44 . 49 . 34,92		61,0	60,6	56,79				82 . 37 . 39,99	α Orionis R.
	44 . 49 . 34,63								82 . 37 . 39,70	α Orionis.
	44 . 44 . 4,76	29,958	63,6	63,8					82 . 8 . 14,60	☽.
	44 . 44 . 3,21				56,25	39 . 8,84		15 . 14,15	82 . 8 . 13,05	☽.
	44 . 44 . 4,28								82 . 8 . 14,12	☽.
51,45	−39 . 20 . 29,79	29,970	63,2	62,8	46,64				−1 . 34 . 8,15	Polaris SP. R.
	−39 . 20 . 29,48								−1 . 34 . 7,84	Polaris SP.
50,83	32 . 9 . 52,65		62,5	62,1	35,85				69 . 57 . 36,78	Arcturus R.
	32 . 9 . 51,73								69 . 57 . 35,86	Arcturus.
51,78	−34 . 21 . 50,74	29,978	56,2	54,0	39,61				3 . 24 . 37,93	δ Urs. Min. R.
	−34 . 21 . 49,76								3 . 24 . 38,91	δ Ursæ Minoris.
50,58	43 . 45 . 29,23	29,960	53,6	52,8	55,56				81 . 33 . 33,07	α Aquilæ R.
	43 . 45 . 27,80								81 . 33 . 81,64	α Aquilæ.
49,87	−36 . 35 . 18,38	29,500	51,3	50,6	42,62				1 . 11 . 7,28	λ Urs. Min. R.
	−36 . 35 . 17,14								1 . 11 . 8,52	λ Ursæ Minoris.
49,15	7 . 30 . 54,99				7,58				45 . 18 . 10,85	α Cygni R.
	7 . 30 . 54,79								45 . 18 . 10,65	α Cygni.
49,76	−9 . 40 . 28,45		50,8	48,1	9,84				28 . 6 . 29,99	α Cephei R.
	−9 . 40 . 27,43								28 . 6 . 31,01	α Cephei.
	37 . 37 . 4,02				44,46	2,02			75 . 24 . 54,74	Pallas.
	37 . 36 . 16,95				44,44				75 . 24 . 9,67	∗ AR $21^{h}.19^{m}.45^{s}$.
	31 . 29 . 45,41	29,510	57,4	57,7	34,69	4,38		15 . 45,90	69 . 33 . 9,90	☉.
	32 . 1 . 17,72				35,41	4,45			69 . 33 . 11,06	☉.
49,02	13 . 34 . 28,40	29,610	56,0	53,4	13,84				51 . 21 . 50,52	α Lyræ R.
	13 . 34 . 27,93								51 . 21 . 50,05	α Lyræ.
48,09	19 . 1 . 54,82				19,77				56 . 49 . 22,87	β Lyræ R.
	19 . 1 . 52,51								56 . 49 . 20,56	β Lyræ.
48,52	46 . 11 . 41,89		53,8	51,6	59,91				83 . 59 . 50,08	β Aquilæ R.
	46 . 11 . 40,43								83 . 59 . 48,62	β Aquilæ.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},051. One revolution = 20″,843.

Correction for Runs = − 6″,4. From July 15. = − 4″,7.

Adopted Zenith Point = 195° . 9′ . 56″,24. From July 16. = 195° . 9′ . 51″,29. From July 20. = 195° . 9′ . 49″,25.

Assumed Co-latitude = 37° . 47′ . 8″,28.

Runs taken on July 13, used from July 11, when the temperature increased. Runs taken July 19. No known cause of change of Zenith point between July 15 and 16. The change on July 20 by altering the screws of the axis of the Circle.

July 12. 11^{h}, Molyneux fast on Hardy $1^{m}.58^{s},7$. July 16. 7^{h}, by $2^{m}.8^{s},8$; July 18. 6^{h}, by $1^{m}.13^{s},2$; July 18, $10\frac{1}{2}^{h}$. by $1^{m}.13^{s},7$; and July 20. $12\frac{1}{2}^{h}$, by $1^{m}.19^{s},7$.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
July 22	(a) ⊙ S.L. M.	227 . 20	4 . 9,0	29,3	15,8	34,2	20,8	25,8	14,201	− 1 . 26,49	227 . 22 . 55,31	G.
	⊙ N.L.	226 . 50	1 . 12,0	33,0	17,8	38,2	23,3	28,4			226 . 51 . 25,23	G.
	(b) Venus N.L.	233 . 50	4 . 11,9	31,9	17,1	35,0	24,2	27,1			233 . 54 . 23,85	G.
	Mars center	225 . 20	2 . 6,0	25,3	10,4	30,3	16,8	21,1			225 . 22 . 17,95	G.
	Capella R. M.	8 . 45	2 . 13,8	35,7	20,0	40,1	25,0	30,2	13,051	− 1 . 2,53	8 . 46 . 24,55	G.
	Capella	201 . 30	3 . 1,2	20,8	8,0	25,0	9,7	16,4			201 . 33 . 13,00	G.
	β Tauri R. M.	351 . 25	1 . 3,3	24,9	1[illegible],4	30,4	16,1	21,1	13,390	− 1 . 9,60	351 . 25 . 8,07	G.
	β Tauri	218 . 50	4 . 17,2	36,0	21,8	40,5	27,9	32,7			218 . 54 . 28,65	G.
	α Orionis R. M.	330 . 20	1 . 8,0	28,8	14,7	35,6	20,2	26,9	13,349	− 1 . 8,75	330 . 20 . 13,40	G.
	(c) α Orionis	239 . 55	4 . 9,9	30,5	15,8	33,2	23,3	26,6		+ 0,08	239 . 59 . 22,61	G.
July 23	⊙ N.L. M.	227 . 5	1 . 5,2	27,3	12,0	31,9	18,9	22,8	17,950	− 2 . 44,64	227 . 3 . 34,84	G.
	(d) ⊙ S.L.	227 . 30	4 . 51,9	75,2	59,1	79,5	65,6	70,8			227 . 35 . 7,02	G.
	(e) Venus N.L.	233 . 55	1 . 48,1	68,3	53,6	73,1	61,8	64,8			233 . 57 . 1,30	G.
	α Ophiuchi R. M. ...	335 . 35	3 . 13,4	34,2	19,8	39,0	26,8	30,2	8,885	+ 24,30	335 . 38 . 50,98	G.
	α Ophiuchi	234 . 40	0 . 32,0	52,5	37,9	56,9	42,4	50,4			234 . 40 . 45,23	G.
	δ Urs. Min. R. M. ...	49 . 30	2 . 13,6	36,6	18,4	41,0	26,2	31,9	12,266	− 46,17	49 . 31 . 41,40	G.
	δ Ursæ Minoris	160 . 45	2 . 43,7	64,4	49,7	69,5	52,4	60,4			160 . 47 . 56,22	G.
	α Lyræ R. M.	1 . 35	1 . 13,0	35,4	21,0	40,8	25,8	29,9	13,274	− 1 . 7,18	1 . 35 . 20,25	G.
	α Lyræ	208 . 40	4 . 2,8	23,0	9,0	28,2	13,1	18,9			208 . 44 . 15,15	G.
July 25	Mercury N.L.	225 . 20	2 . 16,7	37,7	21,4	41,1	29,4	32,9			225 . 22 . 29,47	G.
July 26	Mars center	224 . 55	3 . 21,2	42,0	24,1	45,6	34,1	37,2			224 . 58 . 33,47	G.
	Capella R. M.	8 . 45	2 . 9,0	32,0	15,4	36,8	23,0	27,8	12,941	− 1 . 0,24	8 . 46 . 23,38	G.
	Capella	201 . 30	3 . 0,8	20,2	6,0	24,2	12,8	17,1			201 . 33 . 13,00	G.
July 27	γ Aquilæ R. M.	333 . 10	0 . 15,4	35,0	20,0	42,4	28,2	34,2	8,648	+ 29,73	333 . 10 . 58,85	G.
	γ Aquilæ	237 . 5	3 . 25,8	45,9	29,0	49,4	36,5	43,0			237 . 8 . 37,60	G.
	59 Sagittarii	274 . 50	3 . 10,7	31,0	16,4	35,7	22,4	27,5			274 . 53 . 23,33	G.
	c Sagittarii	275 . 25	1 . 35,4	56,0	39,8	59,4	45,5	51,7			275 . 26 . 47,63	G.
	(f) ☽ S.L.	273 . 5	3 . 52,8	74,0	60,0	77,4	63,9	69,0		− 4,92	273 . 9 . 0,51	G.
	☽ S.L. M.	273 . 5	3 . 52,8	74,0	60,0	77,4	63,9	69,0	10,255	− 3,77 − 2,46	273 . 8 . 59,20	G.
	☽ S.L. M.	273 . 5	3 . 52,8	74,0	60,0	77,4	63,9	69,0	10,410	− 7,01	273 . 8 . 58,42	G.
	☽ S.L. M.	273 . 5	3 . 52,8	74,0	60,0	77,4	63,9	69,0	10,545	− 9,82 + 2,46	273 . 8 . 58,07	G.
	☽ S.L. M.	273 . 5	3 . 52,8	74,0	60,0	77,4	63,9	69,0	10,634	− 11,67 + 4,92	273 . 8 . 58,68	G.
	α Cygni R. M.	7 . 40	0 . 15,2	38,2	20,3	44,0	29,6	34,7	14,555	− 1 . 33,40	7 . 38 . 56,85	G.
	α Cygni	202 . 40	0 . 27,6	45,8	31,0	51,4	37,7	44,8			202 . 40 . 39,60	G.
	ν Cygni R. M.	3 . 30	0 . 25,5	49,7	31,9	53,3	41,0	44,1	13,390	− 1 . 9,11	3 . 29 . 31,69	G.
	(d) ν Cygni	206 . 45	4 . 52,5	72,2	57,6	77,5	65,3	70,3			206 . 50 . 5,90	G.
	η Capricorni ....,	267 . 45	4 . 11,9	32,0	17,0	36,0	24,5	29,0			267 . 49 . 24,25	G.
	Pallas M.	233 . 20	2 . 0,2	18,9	5,0	24,4	10,8	17,8	13,210	− 1 . 5,37	233 . 21 . 7,06	G.
	(g) ∗ Æ. 21^{h}. 19^{m}. 45^{s}.	232 . 45	0 . 52,0	70,8	56,5	77,0	62,9	70,4			232 . 46 . 4,73	G.
	Uranus	258 . 15	1 . 10,8	29,6	16,4	35,0	20,9	29,0			258 . 16 . 23,37	G.
	Mars center	224 . 50	2 . 55,9	76,2	60,6	80,2	68,5	71,5			224 . 53 . 8,25	G.
	Capella R. M.	8 . 45	2 . 11,7	32,7	17,0	37,9	24,8	28,4	12,988	− 1 . 0,74	8 . 46 . 24,24	G.
	Capella	201 . 30	3 . 1,2	21,4	6,9	25,8	12,2	17,1			201 . 33 . 13,50	G.
July 28	⊙ S.L. M.	228 . 40	2 . 32,2	54,0	36,2	57,5	44,5	49,0	15,240	− 1 . 47,68	228 . 40 . 57,39	G.
	⊙ N.L.	228 . 5	4 . 11,8	33,8	16,7	36,9	24,2	28,0			228 . 9 . 24,42	G.

(a) Without coloured glass. Faint.

(b) Cloudy: rather doubtful.

(c) At the 5th wire. (d) No correction for runs.

(e) Very doubtful observation. The observer could not be certain of the termination of the cusp. (The tabular semi-diameter is used).

(f) At the five wires. The limb uneven and very unsteady.

(g) Star taken with Pallas, it being doubtful at the time which was the planet.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	32 . 13 . 6,06	29,692	58,2	58,4	35,85	4,47		15 . 46,00	69 . 44 . 59,72	⊙.
	31 . 41 . 35,98				35,13	4,41			69 . 45 . 0,98	⊙.
	38 . 44 . 34,60				45,63	18,31		28,20	76 . 32 . 38,40	Venus.
	30 . 12 . 28,70	29,940	55,6	56,0	33,57	2,24			68 . 0 . 8,31	Mars.
48,78	6 . 23 . 24,70		56,2	57,0	6,45				44 . 10 . 39,43	Capella R.
	6 . 23 . 23,75								44 . 10 . 38,48	Capella.
48,86	23 . 44 . 41,18				25,31				61 . 32 . 14,77	β Tauri R.
	23 . 44 . 39,40								61 . 32 . 12,99	β Tauri.
48,01	44 . 49 . 35,85		57,3	58,7	56,95				82 . 37 . 41,08	α Orionis R.
	44 . 49 . 33,36								82 . 37 . 38,59	α Orionis.
	31 . 53 . 45,59	29,966	60,2	61,2	35,54	4,43		15 . 46,10	69 . 57 . 11,08	⊙.
	32 . 25 . 17,77				36,27	4,50			69 . 57 . 11,72	⊙.
	38 . 47 . 12,05				45,87	18,38		28,30	76 . 35 . 16,12	Venus.
48,10	39 . 30 . 58,27	29,956	57,3	55,6	47,59				77 . 18 . 54,14	α Ophiuchi R.
	39 . 30 . 55,98								77 . 18 . 51,85	α Ophiuchi.
48,81	− 34 . 21 . 52,15	29,938	56,0	53,5	39,60				3 . 24 . 36,53	δ Urs. Min. R.
	− 34 . 21 . 53,03								3 . 24 . 35,65	δ Ursæ Minoris.
47,70	13 . 34 . 29,00				13,99				51 . 21 . 51,27	α Lyræ R.
	13 . 34 . 25,90								51 . 21 . 48,17	α Lyræ.
	30 . 12 . 40,22	30,012	63,4	62,5	33,21	4,06	9,783	2,80	68 . 0 . 20,45	Mercury.
	29 . 48 . 44,22	30,010	62,4	63,7	32,60	2,24			67 . 36 . 22,86	Mars.
48,19	6 . 23 . 25,87				6,38				44 . 10 . 40,53	Capella R.
	6 . 23 . 23,75								44 . 10 . 38,41	Capella.
48,23	41 . 58 . 50,40	30,000	61,5	60,0	51,52				79 . 46 . 50,20	γ Aquilæ R.
	41 . 58 . 48,35								79 . 46 . 48,15	γ Aquilæ.
	79 . 43 . 34,08				5 . 5,40				117 . 35 . 47,76	59 Sagittarii.
	80 . 16 . 58,38				5 . 22,03				118 . 9 . 28,69	c Sagittarii.
	77 . 59 . 11,26	29,994	60,9	58,4					114 . 34 . 46,43	☽.
	77 . 59 . 9,95								114 . 34 . 45,12	☽.
	77 . 59 . 9,17				4 . 23,26	59 . 21,66		16 . 34,71	114 . 34 . 44,34	☽.
	77 . 59 . 8,82								114 . 34 . 43,99	☽.
	77 . 59 . 9,43								114 . 34 . 44,60	☽.
48,23	7 . 30 . 52,40				7,58				45 . 18 . 8,26	α Cygni R.
	7 . 30 . 50,35								45 . 18 . 6,21	α Cygni.
48,80	11 . 40 . 17,56		60,5	58,1	11,88				49 . 27 . 37,72	ν Cygni R.
	11 . 40 . 16,65								49 . 27 . 36,81	ν Cygni.
	72 . 39 . 35,00				3 . 1,97				110 . 29 . 45,25	η Capricorni.
	38 . 11 . 17,81			57,6	45,25	2,09			75 . 59 . 9,25	Pallas.
	37 . 36 . 15,48				44,31				75 . 24 . 8,07	∗ Æ $21^{h}.19^{m}.45^{s}$.
	63 . 6 . 34,12	29,976	58,3	56,0	1 . 53,30	0,40			100 . 55 . 35,30	Uranus.
	29 . 43 . 19,00	29,960	61,2	62,7	32,50	2,24			67 . 30 . 57,54	Mars.
48,87	6 . 23 . 25,01				6,38				44 . 10 . 39,67	Capella R.
	6 . 23 . 24,25								44 . 10 . 38,91	Capella.
	33 . 31 . 8,14	29,928	70,0	71,0	37,04	4,64		15 . 46,60	71 . 3 . 2,22	⊙.
	32 . 59 . 35,17				36,31	4,57			71 . 3 . 1,79	⊙.

Coincidence of Micrometer Wire with fixed Wire = $10^{r},051$. From July 27. = $10^{r},074$. One revolution = 20″,843.
Correction for Runs = − 4″,7. From July 27. = − 5″,5.
Adopted Zenith Point = 195°. 9′. 49″,25.
Assumed Co-latitude = 37°. 47′. 8″,28.
The coincidence of the Micrometer wire with fixed wire, taken twice on July 27, with the same result.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes. A	B	C	D	E	F	Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
July 29	☉ N.L. M.	228 . 20	3 . 44,7	65,2	49,3	68,6	55,2	59,8	11,222	− 23,92	228 . 23 . 32,50	G.
	☉ S.L.	228 . 50	4 . 55,0	74,2	60,0	79,2	66,4	70,8			228 . 55 . 6,67	G.
	Venus N.L.	234 . 0	0 . 38,6	59,0	44,0	62,4	48,9	54,7			234 . 0 . 51,12	G.
July 30	ε Urs. Min. R. M.	45 . 15	1 . 18,1	39,4	22,4	44,1	27,9	34,5	16,601	− 2 . 16,00	45 . 14 . 14,97	G.
	ε Ursæ Minoris	165 . 5	0 . 14,0	32,5	18,8	38,5	22,0	30,8			165 . 5 . 26,07	G.
	α Ophiuchi R. M.	335 . 35	4 . 10,6	29,8	17,0	35,1	22,2	25,4	11,517	− 30,03	335 . 38 . 53,02	G.
	α Ophiuchi	234 . 40	0 . 33,7	52,7	37,7	56,9	41,9	49,8			234 . 40 . 45,40	G.
	δ Urs. Min. R. M.	49 . 30	2 . 6,6	28,2	11,5	33,0	16,3	23,2	11,782	− 35,56	49 . 31 . 44,07	G.
	δ Ursæ Minoris	160 . 45	2 . 44,3	63,5	49,2	68,0	52,2	59,3			160 . 47 . 55,88	G.
	α Lyræ R. M.	1 . 35	1 . 5,1	26,0	12,4	32,0	16,0	21,2	12,717	− 55,05	1 . 35 . 23,65	G.
	α Lyræ	208 . 40	4 . 2,3	21,0	8,5	26,3	10,0	16,2			208 . 44 . 13,75	G.
	c Sagittarii	275 . 25	1 . 32,5	51,2	38,4	54,7	40,4	47,0			275 . 26 . 43,92	G.
	η Capricorni	267 . 45	4 . 10,9	29,2	18,0	34,4	19,0	25,9			267 . 49 . 22,60	G.
	Pallas	233 . 35	4 . 15,7	32,7	20,6	38,0	23,5	29,7			233 . 39 . 26,38	G
	Uranus	258 . 15	3 . 27,1	45,1	33,0	49,5	34,7	43,0			258 . 18 . 38,48	G.
Aug. 1	(a) δ Urs. Min. R. M.	49 . 30	2 . 9,2	32,4	14,4	35,9	24,3	27,9	11,948	− 39,01	49 . 31 . 44,84	G.
	δ Ursæ Minoris	160 . 45	2 . 40,0	63,2	46,0	66,4	53,3	57,5			160 . 47 . 54,20	G.
	α Lyræ R. M.	1 . 35	1 . 25,1	47,8	31,7	51,6	39,0	43,1	13,770	− 1 . 17,00	1 . 35 . 22,60	G.
	α Lyræ	208 . 40	4 . 0,5	22,0	7,5	26,5	14,0	17,0			208 . 44 . 14,28	G.
	β Lyræ R. M.	356 . 5	3 . 9,1	32,2	17,7	36,5	24,1	27,2	11,333	− 26,20	356 . 7 . 58,03	G.
	β Lyræ	214 . 10	1 . 26,5	46,0	29,8	50,5	37,9	42,7			214 . 11 . 38,78	G.
	(b) Uranus	258 . 15	4 . 58,9	78,8	66,3	84,3	70,8	77,4			258 . 20 . 11,73	G.
	Capella R. M.	8 . 45	2 . 12,0	33,7	20,0	38,3	24,8	28,7	12,988	− 1 . 0,70	8 . 46 . 25,38	G.
	Capella	201 . 30	3 . 2,0	20,7	9,2	25,5	11,3	16,7			201 . 33 . 14,00	G.
	Mars center	224 . 25	3 . 44,5	64,0	49,7	68,9	56,3	58,8			224 . 28 . 56,75	G.
Aug. 2	☉ S.L. M.	229 . 55	1 . 31,2	52,6	35,4	55,8	43,2	47,8	16,205	− 2 . 7,75	229 . 54 . 36,47	G.
	(c) 31 Camel. SP. R. M.	83 . 5	3 . 6,0	28,1	12,1	34,7	19,8	24,2	21,904	− 4 . 6,53	83 . 4 . 14,05	G.
	31 Camelopard. SP.	127 . 15	0 . 10,0	31,8	14,6	37,2	22,1	27,8			127 . 15 . 23,88	G.
	δ Urs. Min. R. M.	49 . 30	2 . 2,0	25,5	6,2	30,4	15,9	20,2	11,660	− 33,01	49 . 31 . 43,52	G.
	δ Ursæ Minoris	160 . 45	2 . 41,2	63,0	46,0	66,4	53,3	57,8			160 . 47 . 54,42	G.
	α Lyræ R. M.	1 . 35	1 . 11,4	34,7	18,0	40,1	26,8	29,2	13,097	− 1 . 2,97	1 . 35 . 23,63	G.
	α Lyræ	208 . 40	4 . 0,8	22,0	7,0	27,2	15,3	17,2			208 . 44 . 14,62	G.
	A. S. C. 874. SP. R. M.	60 . 10	4 . 5,2	28,9	10,8	33,5	20,2	25,0	11,360	− 26,76	60 . 13 . 53,54	G.
	A. S. C. 874. SP.	150 . 5	0 . 30,0	52,9	35,0	56,0	43,0	47,5			150 . 5 . 44,02	G.
	Capella R. M.	8 . 45	2 . 4,8	26,8	11,8	32,0	17,0	22,1	12,687	− 54,43	8 . 46 . 24,49	G.
	(d) Capella	201 . 30	3 . 1,0	20,5	6,8	25,2	11,0	15,8		+ 0,62	201 . 33 . 13,79	G.
	(e) Mars center	224 . 20	4 . 31,8	51,8	35,3	55,4	43,8	45,7		+ 0,35	224 . 24 . 43,98	G.
	(f) Venus N.L.	233 . 50	2 . 53,4	74,5	58,4	78,9	66,0	69,8			233 . 53 . 6,62	G.
	(g) Mercury center	226 . 10	3 . 34,2	56,5	38,2	60,5	48,0	50,6			226 . 13 . 47,73	G.
Aug. 3	☉ N.L. M.	229 . 40	1 . 27,2	50,0	32,5	52,8	41,6	44,1	18,780	− 3 . 1,41	229 . 38 . 39,84	G.
	☉ S.L.	230 . 10	0 . 0,9	22,7	6,6	27,2	14,2	18,5			230 . 10 . 15,00	G.
	δ Draconis R. M.	30 . 15	3 . 16,8	38,5	20,0	42,9	30,0	34,9	8,122	+ 40,72	30 . 19 . 10,99	G.
	δ Draconis	180 . 0	0 . 14,2	33,2	19,0	40,0	25,5	32,2			180 . 0 . 27,32	G.
	γ Aquilæ R. M.	333 . 10	0 . 16,2	37,2	20,4	44,5	31,2	35,2	8,723	+ 28,19	333 . 10 . 58,94	G.
	γ Aquilæ	237 . 5	3 . 27,0	46,8	30,0	50,0	39,2	43,8			237 . 8 . 39,22	G.
	(h) α Cygni R. M.	7 . 40	0 . 41,4	62,8	46,3	68,5	55,0	59,0	15,642	− 1 . 56,02 − 0,15	7 . 38 . 59,26	G.
	α Cygni	202 . 40	0 . 24,0	42,4	26,5	48,7	36,4	40,7		+ 0,59	202 . 40 . 36,99	G.
	Pallas	234 . 5	1 . 46,5	64,2	49,0	69,4	56,7	62,2			234 . 6 . 57,87	G.

(a) Too much wind for the reflection observations to be satisfactory.

(b) Small correction for runs.

(c) Doubtful.

(d) At the 5th wire.

(e) At the 5th wire. Correction for change of N.P.D. = + 0″,10; for curvature of path = + 0″,25.

(f) The Sun had been previously shining on the attached thermometer.

(g) Very doubtful observation.

(h) At the 4th and 5th wires. Not good.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	33 . 13 . 43,25	29,500	67,0	67,6	36,36	4,60		15 . 46,70	71 . 17 . 9,99	⊙.
	33 . 45 . 17,42				37,09	4,66			71 . 17 . 11,43	⊙.
	38 . 51 . 1,87	29,900	60,0	60,0	45,99	18,28		28,20	76 . 39 . 6,06	Venus.
50,52	− 30 . 4 . 25,72	30,122	58,5	56,2	33,56				7 . 42 . 9,00	ε Urs. Min. R.
	− 30 . 4 . 23,18								7 . 42 . 11,54	ε Ursæ Minoris.
49,21	39 . 30 . 56,23	30,130	58,0	55,7	47,85				77 . 18 . 52,36	α Ophinchi R.
	39 . 30 . 56,15								77 . 18 . 52,28	α Ophiuchi.
49,98	− 34 . 21 . 54,82	30,150	57,2	54,4	39,81				3 . 24 . 33,65	δ Urs. Min. R.
	− 34 . 21 . 53,37								3 . 24 . 35,10	δ Ursæ Minoris.
48,70	13 . 34 . 25,60				14,06				51 . 21 . 47,94	α Lyræ R.
	13 . 34 . 24,50								51 . 21 . 46,84	α Lyræ.
	80 . 16 . 54,67	30,176	55,3	53,1	5 . 28,57				118 . 9 . 31,52	c Sagittarii.
	72 . 39 . 33,35	30,180	54,8	52,5	3 . 5,20				110 . 29 . 46,83	η Capricorni.
	38 . 29 . 37,13				46,51	2,11			76 . 17 . 29,81	Pallas.
	63 . 8 . 49,23	30,192	54,2	51,7	1 . 55,30	0,40			100 . 57 . 52,41	Uranus.
49,52	− 34 . 21 . 55,59	29,872	58,4	57,2	39,22				3 . 24 . 33,07	δ Urs. Min. R.
	− 34 . 21 . 55,05								3 . 24 . 34,01	δ Ursæ Minoris.
48,44	13 . 34 . 26,65				13,86				51 . 21 . 48,79	α Lyræ R.
	13 . 34 . 25,03								51 . 21 . 47,17	α Lyræ.
48,41	19 . 1 . 51,22				19,79				56 . 49 . 19,29	β Lyræ R.
	19 . 1 . 49,53								56 . 49 . 17,60	β Lyræ.
	63 . 10 . 22,48	29,850	53,9	52,2	1 . 54,02	0,40			100 . 59 . 24,38	Uranus.
49,69	6 . 23 . 23,87	29,900	57,2	57,0	6,44				44 . 10 . 38,59	Capella R.
	6 . 23 . 24,75								44 . 10 . 39,47	Capella.
	29 . 19 . 7,50				32,27	2,23			67 . 6 . 45,82	Mars.
	34 . 44 . 47,22	29,952	61,6	62,7	39,47	4,79		15 . 47,20	72 . 16 . 42,98	⊙.
48,97	− 67 . 54 . 24,80	30,010	61,0	59,4	2 . 20,38				− 30 . 9 . 36,90	31 Camel. SP. R.
	− 67 . 54 . 25,37								− 30 . 9 . 37,47	31 Camel. SP.
48,97	− 34 . 21 . 54,27	30,000	59,4	57,5	39,37				3 . 24 . 34,64	δ Urs. Min. R.
	− 34 . 21 . 54,83								3 . 24 . 34,08	δ Ursæ Minoris.
49,13	13 . 34 . 25,62				13,91				51 . 21 . 47,81	α Lyræ R.
	13 . 34 . 25,37								51 . 21 . 47,56	α Lyræ.
48,78	− 45 . 4 . 4,29				57,66				− 7 . 17 . 53,67	A. S. C. 874. SP. R.
	− 45 . 4 . 5,23								− 7 . 17 . 54,61	A. S. C. 874. SP.
49,14	6 . 23 . 24,76	29,916	59,8	60,7	6,39				44 . 10 . 39,43	Capella R.
	6 . 23 . 24,54								44 . 10 . 39,21	Capella.
	29 . 14 . 54,73				31,96	2,24			67 . 2 . 32,73	Mars.
	38 . 43 . 17,37	29,880	69,5	68,1	45,00	17,77	7,496	27,58	76 . 31 . 20,46	Venus.
	31 . 3 . 58,48		68,7	68,4	33,81	3,57			68 . 51 . 37,00	Mercury.
	34 . 28 . 50,59	29,850	67,8	69,3	38,44	4,76		15 . 47,40	72 . 32 . 19,95	⊙.
	35 . 0 . 25,75				39,20	4,82			72 . 32 . 21,01	⊙.
49,16	− 15 . 9 . 21,74	29,650	64,0	64,0	15,22				22 . 37 . 31,32	δ Draconis R.
	− 15 . 9 . 21,93								22 . 37 . 31,13	δ Draconis.
49,08	41 . 58 . 50,31				50,52				79 . 46 . 49,11	γ Aquilæ R.
	41 . 58 . 49,97								79 . 46 . 48,77	γ Aquilæ.
48,13	7 . 30 . 49,99	29,640	63,7	62,5	7,43				45 . 18 . 5,70	α Cygni R.
	7 . 30 . 47,74								45 . 18 . 3,45	α Cygni.
	38 . 57 . 8,62	29,632	62,8	60,9	45,65	2,15			76 . 45 . 0,40	Pallas.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},074. From July 30. = 10^{r},076. One revolution = 20″,843.
Correction for Runs = − 5″,5. From July 30. = − 2″,1.
Adopted Zenith Point = 195° . 9′ . 49″,25.
Assumed Co-latitude = 37° . 47′ . 8″,28.
The coincidence of Micrometer wire with fixed wire, taken July 31. 22^{h}.
The Micrometer head having received a slight blow, the coincidence of the wires was taken Aug. 1, but no alteration appeared.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes. A	B	C	D	E	F	Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Aug. 3	*v* U. Maj. SP. R. M.	83 . 5	2 . 15,0	34,8	18,8	42,0	26,6	32,3	13,633	– 1 . 14,14	83 . 6 . 13,94	G.
	v Ursæ Majoris SP.	127 . 10	3 . 11,8	31,3	14,3	36,9	21,7	28,8			127 . 13 . 23,90	G.
	Uranus	258 . 20	1 . 38,7	57,2	41,7	62,4	50,0	55,2			258 . 21 . 50,73	G.
	Capella R. M.	8 . 45	2 . 5,8	27,4	12,4	32,0	17,1	23,0	12,712	– 54,96	8 . 46 . 24,49	G.
	Capella	201 . 30	3 . 1,3	21,3	6,0	24,3	12,9	16,7			201 . 33 . 13,53	G.
	Mars center	224 . 20	0 . 29,8	49,1	32,9	54,9	40,3	45,5			224 . 20 . 42,03	G.
	Venus N.L.	233 . 50	0 . 4,6	24,9	8,7	28,9	16,2	21,4			233 . 50 . 17,43	G.
	Mercury center	226 . 30	1 . 38,1	60,4	42,7	65,0	52,0	55,0			226 . 31 . 52,07	G.
Aug. 4	(*a*) ☉ S.L. M.	230 . 25	1 . 27,5	49,4	31,8	52,0	42,0	43,3	11,690	– 33,64	230 . 26 . 7,24	G.
	☉ N.L.	229 . 50	4 . 22,2	42,8	25,0	46,3	33,9	37,6			229 . 54 . 34,32	G.
Aug. 5	(*b*) Uranus	258 . 20	3 . 15,6	33,2	19,8	37,8	22,3	31,2		– 0,43	258 . 23 . 25,99	C.
	(*c*) ☽ N.L.	224 . 30	2 . 3,2	22,2	8,5	27,4	13,9	20,3		– 4,66	224 . 32 . 11,11	G.
	Capella R. M.	8 . 45	2 . 0,0	21,8	7,4	26,8	11,8	17,0	12,415	– 48,76	8 . 46 . 25,22	G.
	Capella	201 . 30	3 . 2,7	21,9	8,2	26,6	12,5	18,5			201 . 33 . 14,85	G.
	β Tauri R. M.	351 . 25	1 . 12,7	33,8	19,5	40,8	26,2	30,0	13,804	– 1 . 17,71	351 . 25 . 9,36	G.
	β Tauri	218 . 50	4 . 18,0	36,5	22,4	41,2	28,9	33,7			218 . 54 . 29,80	G.
	(*d*) Venus S.L.	233 . 40	4 . 30,2	50,5	34,8	54,2	41,5	45,0		+ 0,23	233 . 44 . 42,60	G.
	Mercury center	227 . 15	0 . 35,0	57,0	39,8	62,0	46,8	52,3			227 . 15 . 48,77	G.
Aug. 6	(*e*) ☉ S.L. M.	231 . 0	0 . 21,8	42,9	26,0	46,4	33,8	38,5	15,280	– 1 . 48,54	230 . 58 . 46,31	G.
	☉ S.L.	230 . 25	1 . 58,1	79,0	64,8	84,2	70,4	75,9			230 . 27 . 11,87	G.
	γ Aquilæ R. M.	333 . 10	1 . 13,2	32,0	19,2	38,7	24,0	30,2	11,157	– 22,59	333 . 11 . 3,49	G.
	γ Aquilæ	237 . 5	3 . 24,0	42,4	27,8	47,2	33,4	40,8			237 . 8 . 35,62	G.
	β Aquilæ R. M.	328 . 55	3 . 31,5	49,6	36,5	55,6	41,7	46,8	11,633	– 32,51	328 . 58 . 10,77	G.
	β Aquilæ	241 . 20	1 . 15,2	32,2	18,7	37,7	23,2	31,8			241 . 21 . 26,33	G.
	(*f*) Pallas	234 . 25	4 . 45,9	64,3	50,8	69,8	55,4	62,8			234 . 29 . 58,17	G.
	α Cephei R. M.	24 . 50	0 . 18,7	40,2	24,2	45,0	30,5	35,3	10,520	– 9,32	24 . 50 . 22,95	G.
	α Cephei	185 . 25	4 . 4,0	22,9	9,5	29,0	14,0	21,2			185 . 29 . 16,38	G.
	β Cephei R. M.	32 . 45	2 . 11,9	34,0	16,2	38,3	22,1	29,7	10,794	– 15,03	32 . 47 . 10,12	G.
	β Cephei	177 . 30	2 . 17,0	37,2	23,3	40,8	26,8	33,3			177 . 32 . 29,52	G.
	Uranus	258 . 20	3 . 58,9	77,5	66,7	83,0	67,5	75,9			258 . 24 . 11,22	G.
Aug. 7	(*g*) *β* Tauri R. M.	351 . 25	1 . 21,0	42,4	28,0	47,9	34,2	38,6	14,182	– 1 . 25,64 – 0,08	351 . 25 . 9,48	G.
	β Tauri	218 . 50	4 . 16,2	36,0	21,8	41,0	28,0	32,4		+ 0,73	218 . 54 . 29,56	G.
	Mars center	224 . 5	1 . 19,8	39,2	23,5	44,4	31,0	35,8			224 . 6 . 32,15	G.
	α Orionis R. M.	330 . 20	1 . 5,2	26,1	11,8	32,8	16,3	23,7	13,038	– 1 . 1,80	330 . 20 . 17,40	G.
	α Orionis	239 . 55	4 . 8,0	27,9	14,1	32,2	20,0	25,2			239 . 59 . 20,85	G.
	(*h*) Venus N.L.	233 . 35	1 . 11,3	31,0	16,8	36,2	22,1	27,6			233 . 36 . 24,05	G.
	Mercury center	228 . 5	4 . 21,2	41,5	25,2	46,5	32,9	36,8			228 . 9 . 33,62	G.
Aug. 8	☉ S.L. M.	231 . 30	1 . 22,3	43,0	26,3	48,0	34,4	39,0	7,440	+ 54,89	231 . 32 . 30,24	G.
	☉ N.L.	231 . 0	0 . 41,9	63,0	46,2	67,8	53,0	57,7			231 . 0 . 54,85	G.
	(*i*) *α* Cygni R. M.	7 . 40	0 . 22,8	43,6	27,7	49,3	36,0	40,7	14,670	– 1 . 35,82 – 0,15	7 . 39 . 0,66	G.
	α Cygni	202 . 40	0 . 23,8	42,5	25,8	48,2	33,0	40,4		+ 0,59	202 . 40 . 36,16	G.
	Pallas	234 . 45	1 . 23,7	41,2	25,8	46,8	33,4	39,3			234 . 46 . 34,90	G.
	α Cephei R. M.	24 . 50	0 . 16,2	38,6	21,3	42,8	28,8	34,4	10,358	– 5,94	24 . 50 . 24,36	G.
	α Cephei	185 . 25	4 . 1,5	21,5	7,2	27,1	12,0	20,3			185 . 29 . 14,55	G.
	α Aquarii R. M.	321 . 45	3 . 13,0	34,8	19,0	39,3	26,3	31,9	0,930	+ 3 . 10,56	321 . 51 . 37,64	G.
	α Aquarii	248 . 25	2 . 48,6	68,0	53,8	73,2	59,8	65,5			248 . 28 . 1,22	G.
	Uranus	258 . 25	0 . 37,3	58,8	42,7	63,2	48,2	55,8			258 . 25 . 50,93	G.
	Mars center	224 . 0	3 . 16,9	37,0	21,2	41,1	29,0	32,5			224 . 3 . 29,30	G.

(*a*) Both limbs ill-defined.

(*b*) Taken 4 intervals before the middle wire, to have time for the transit observation. Correction for change of N.P.D. + 0″,04; for curvature of path – 0″,47.

(*c*) At the 1st wire. The observer could not see the limb clearly.

(*d*) At the 5th wire. Correction for change of N.P.D. = + 0″,09; for curvature of path = + 0″,15. As the limb observed on the fixed wire was not fully illumined, the correction for defect of illumination is applied accordingly.

(*e*) Very unsteady.

(*f*) Exceedingly faint. No correction for runs.

(*g*) At the 4th wire and comb.

(*h*) The micrometer for opposite limb not being read, the semidiameter used is a mean between those of Aug. 5 and Aug. 9.

(*i*) At 4th and 5th wires. Hurried.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
48,92	−67 . 56 . 24,69	29,632	61,6	59,8	2 . 18,72				−30 . 11 . 35,13	*υ* U. Maj. SP. R.
	−67 . 56 . 25,35								−30 . 11 . 35,79	*υ* Urs. Maj. SP.
	63 . 12 . 1,48		60,3	58,9	1 . 51,79	0,40			101 . 1 . 1,15	Uranus.
49,01	6 . 23 . 24,76	29,724	61,7	61,5	6,34				44 . 10 . 39,38	Capella R.
	6 . 23 . 24,28								44 . 10 . 38,90	Capella.
	29 . 10 . 52,78				31,61	2,24			66 . 58 . 30,43	Mars.
	38 . 40 . 28,18	29,743	70,0	67,8	44,75	17,60	7,495	27,44	76 . 28 . 31,05	Venus.
	31 . 22 . 2,82		69,0	68,6	34,04	3,55			69 . 9 . 41,59	Mercury.
	35 . 16 . 17,99	29,746	69,0	70,2	39,38	4,85		15 . 47,50	72 . 48 . 13,30	☉.
	34 . 44 . 45,07				38,62	4,79			72 . 48 . 14,68	☉.
	63 . 13 . 36,74	29,992	59,7	57,9	1 . 53,50	0,40			101 . 2 . 38,12	Uranus.
	29 . 22 . 21,86	30,018	57,8	57,8	32,41	26 . 27,15		14 . 48,54	66 . 58 . 23,94	☽.
50,04	6 . 23 . 24,03	30,028	58,7	58,4	6,45				44 . 10 . 38,76	Capella R.
	6 . 23 . 25,60								44 . 10 . 40,33	Capella.
49,58	23 . 44 . 39,89				25,31				61 . 32 . 13,48	*β* Tauri R.
	23 . 44 . 40,55								61 . 32 . 14,14	*β* Tauri,
	38 . 34 . 53,35	30,058	64,0	61,6	45,63	17,23	12,640	27,09	76 . 22 . 3,60	Venus.
	32 . 5 . 59,52		62,5	62,0	35,86	3,53			69 . 53 . 40,13	Mercury.
	35 . 48 . 57,06	30,060	62,4	62,7	41,20	4,92		15 . 47,80	73 . 20 . 53,82	☉.
	35 . 17 . 22,62				40,41	4,86			73 . 20 . 54,25	☉.
49,56	41 . 58 . 45,76	30,100	55,5	53,9	52,33				79 . 46 . 46,37	*γ* Aquilæ R.
	41 . 58 . 46,37								79 . 46 . 46,98	*γ* Aquilæ.
48,55	46 . 11 . 38,48				1 . 0,61				83 . 59 . 47,37	*β* Aquilæ R.
	46 . 11 . 37,08								83 . 59 . 45,97	*β* Aquilæ.
	39 . 20 . 8,92	30,110	56,2	52,7	47,80	2,18			77 . 8 . 2,82	Pallas.
49,67	−9 . 40 . 33,70				9,95				28 . 6 . 24,63	*α* Cephei R.
	−9 . 40 . 32,87								28 . 6 . 25,46	*α* Cephei.
49,82	−17 . 37 . 20,87				18,54				20 . 9 . 28,87	*β* Cephei R.
	−17 . 37 . 19,73								20 . 9 . 30,01	*β* Cephei.
	63 . 14 . 21,97		54,4	51,2	1 . 55,57	0,40			101 . 3 . 25,42	Uranus.
49,52	23 . 44 . 39,77	30,092	58,3	58,2	25,38				61 . 32 . 13,43	*β* Tauri R.
	23 . 44 . 40,31								61 . 32 . 13,97	*β* Tauri.
	28 . 56 . 42,90				31,90	2,24			66 . 44 . 20,84	Mars.
49,13	44 . 49 . 31,85		58,8	58,7	57,23				82 . 37 . 37,36	*α* Orionis R.
	44 . 49 . 31,60								82 . 37 . 37,11	*α* Orionis.
	38 . 26 . 34,80	30,105	64,0	62,5	45,39	16,81		27,48	76 . 14 . 39,14	Venus.
	32 . 59 . 44,37		64,7	65,0	36,96	3,55			70 . 47 . 26,06	Mercury.
	36 . 22 . 40,99	30,100	64,4	65,2	41,91	4,99		15 . 48,10	73 . 54 . 38,09	☉.
	35 . 51 . 5,60				41,11	4,93			73 . 54 . 38,16	☉.
48,41	7 . 30 . 48,59		58,8	57,0	7,63				45 . 18 . 4,50	*α* Cygni R.
	7 . 30 . 46,91								45 . 18 . 2,82	*α* Cygni.
	39 . 36 . 45,65				47,84	2,19			77 . 24 . 39,58	Pallas.
49,46	−9 . 40 . 35,11				9,86				28 . 6 . 23,31	*α* Cephei R.
	−9 . 40 . 34,70								28 . 6 . 23,72	*α* Cephei.
49,43	53 . 18 . 11,61		58,5	56,8	1 . 17,48				91 . 6 . 37,37	*α* Aquarii R.
	53 . 18 . 11,97								91 . 6 . 37,73	*α* Aquarii.
	63 . 16 . 1,68				1 . 54,35	0,40			101 . 5 . 3,91	Uranus.
	28 . 53 . 40,05	30,140	59,5	59,7	31,79	2,24			66 . 41 . 17,88	Mars.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},076. From Aug. 6. = 10^{r},073. One revolution = 20″,843.
Correction for Runs = −2″,1. From Aug. 6. = −2″,7.
Adopted Zenith Point = 195° . 9′ . 49″,25.
Assumed Co-latitude = 37° . 47′ . 8″,28.
The coincidence of wires taken Aug. 7. 23^{h}.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Aug. 8	α Orionis R. M.....	330.20	1.13,7	34,7	18,7	40,4	25,5	31,8	13,430	− 1. 9,97	330.20.17,36	G.
	α Orionis	239.55	4. 8,4	28,5	13,8	32,3	21,0	25,5			239.59.21,18	G.
	(*a*) Venus S.L...........	233.30	3. 5,7	26,3	11,4	30,4	18,0	22,0			233.33.18,67	G.
	Mercury center.....	228.35	4.36,5	58,4	41,1	61,0	49,0	51,7			228.39.49,18	G.
Aug. 9	(*b*) ⊙ N.L. M...........	231.15	4. 3,8	25,0	9,5	28,4	16,2	20,2	13,286	− 1. 6,97	231.18. 9,83	G.
	⊙ S.L................	231.45	4.33,0	55,0	38,3	59,4	47,5	49,3			231.49.46,65	G.
	(*c*) Arcturus R. M.	343. 0	0.29,1	52,0	35,2	56,5	44,0	46,0	12,380	− 48,09 − 0,05	342.59.55,59	G.
	Arcturus	227.15	4.28,8	49,4	32,8	53,6	41,5	45,1		+ 0,22	227.19.41,67	G.
	ε Bootis R. M.......	350.40	4. 4,4	26,0	11,3	30,8	19,6	21,2	12,018	− 40,53	350.43.37,97	G.
	ε Bootis...............	219.35	0.48,1	67,9	52,5	73,3	59,2	62,9			219.36. 0,57	G.
	(*d*) Pallas.................	234.50	4.46,6	66,2	52,3	70,5	55,8	63,2			234.54.59,10	G.
	α Cephei R. M......	24.50	0.22,3	44,5	27,3	48,8	34,2	40,4	10,600	− 10,99	24.50.25,21	G.
	α Cephei	185.25	4. 3,0	22,8	9,6	27,8	13,0	20,8			185.29.15,78	G.
	β Aquarii R. M....	316.35	4.24,8	44,4	30,8	49,7	35,4	40,4	5,015	+ 1.45,43	316.41.22,60	G.
	β Aquarii...........	253.35	3. 2,0	21,8	8,8	26,7	11,3	19,0			253.38.14,65	G.
	Uranus...............	258.25	1.27,2	46,8	32,9	51,0	36,3	43,7			258.26.39,50	G.
	(*e*) Mars center.........	224. 0	0.25,0	45,8	29,5	49,8	35,6	40,7		+ 0,32	224. 0.38,00	G.
	Venus N.L.........	233.25	3. 0,7	22,0	7,2	26,8	13,0	17,0			233.28.14,17	G.
Aug. 10	(*f*) ⊙ S.L. M.	232. 5	3. 0,4	26,2	4,7	29,8	16,1	18,8	12,880	− 58,51	232. 7.17,21	G.
	⊙ N.L...............	231.35	0.25,5	50,6	28,7	53,5	39,8	43,3			231.35.40,08	G.
	α Herculis R. M...	337.30	4. 4,7	26,8	11,5	31,6	19,0	21,6	14,710	− 1.36,66	337.32.42,16	G.
	α Herculis..........	232.45	1.42,2	62,2	46,5	67,0	53,5	58,4			232.46.54,80	G.
	α Ophiuchi R. M..	335.35	4. 2,4	22,8	8,9	28,0	14,6	19,3	11,094	− 21,28	335.38.54,34	G.
	α Ophiuchi..........	234.40	0.31,3	51,0	34,4	55,0	42,0	47,9			234.40.43,53	G.
	(*g*) δ Urs. Min. R. M..	49.30	2. 3,8	25,5	8,0	30,8	15,7	22,2	11,540	− 30,58	49.31.46,89	G.
	δ Ursæ Minoris.....	160.45	2.40,0	60,2	44,8	64,9	50,3	55,8			160.47.52,42	G.
	α Lyræ R. M........	1.35	1. 6,5	26,8	13,0	32,3	19,1	22,8	12,718	− 55,13	1.35.24,84	G.
	α Lyræ...............	208.40	4. 0,8	20,0	6,4	24,9	10,4	15,5			208.44.12,62	G.
	59 Sagittarii...	274.50	3. 6,8	25,4	13,8	31,3	17,0	23,8			274.53.19,38	G.
	(*h*) α^1 Capricorni R. M.	309.50	3.15,8	34,4	21,2	40,0	25,2	31,9	85,411	+ 5. 5,60 + 0,14	309.58.33,52	G.
	α^1 Capricorni........	260.20	0.51,0	69,9	56,8	75,8	60,8	68,1		− 0,14	260.21. 3,51	G.
	α^2 Capricorni R. M.	309.50	3.15,8	34,4	21,2	40,0	25,2	31,9	1,958	+ 2.49,13 + 0,14	309.56.17,05	G.
	α^2 Capricorni M....	260.20	0.51,0	69,9	56,8	75,8	60,8	68,1	3,542	+ 2.16,13 − 0,14	260.23.19,64	G.
	(*i*) Pallas	235. 0	3.38,8	58,3	43,5	62,5	48,5	54,3			235. 3.50,63	G.
Aug. 11	(*j*) ⊙ N.L. M.	231.50	4. 2,7	22,5	8,8	27,9	15,0	18,8	12,483	− 50,24	231.53.25,33	G.
	⊙ S.L................	232.20	4.48,8	69,8	55,2	74,8	60,8	64,5			232.25. 1,87	G.
	Arcturus R. M.....	342.55	4. 0,6	21,4	7,9	28,2	16,0	17,6	8,090	+ 41,33	342.59.56,23	G.
	Arcturus.............	227.15	4.29,3	49,2	33,8	53,7	41,7	45,3			227.19.41,75	G.
	ε Bootis R. M.......	350.40	4. 3,8	24,3	11,4	30,2	18,1	20,2	12,010	− 40,38	350.43.37,24	G.
	ε Bootis	219.35	0.47,8	66,7	52,0	72,8	59,0	62,8			219.36. 0,10	G.
	δ Urs. Min. R. M..	49.30	2. 9,0	30,2	12,4	35,5	20,5	27,3	11,777	− 35,51	49.31.46,77	G.
	δ Ursæ Minoris	160.45	2.39,2	59,0	43,4	63,5	49,5	54,7			160.47.51,30	G.
	α Lyræ R. M.......	1.35	1. 8,7	29,7	16,0	36,5	20,8	25,9	12,798	− 56,80	1.35.26,02	G.
	α Lyræ........... ...	208.40	4. 0,0	19,0	5,1	24,8	10,0	15,2			208.44.11,97	G.
	Venus N.L..........	233.15	4.21,7	42,2	25,3	46,2	35,2	36,9			233.19.34,17	G.
Aug. 12	(*k*) ⊙ S.L. M............	232.40	4.32,4	53,1	37,9	56,7	46,0	48,0	15,011	− 1.42,93	232.43. 2,32	G.
	⊙ N.L................	232.10	1.11,7	32,5	16,4	37,7	22,7	29,0			232.11.24,88	G.

(*a*) Non-illumined limb on fixed wire.
(*b*) Exceedingly unsteady.
(*c*) At the 4th and 5th wires.
(*d*) No correction for runs.
(*e*) At the 5th wire. Correction for change of N.P.D. = + 0″,06; for curvature of path + 0″,26.
(*f*) The Sun was shining on the instrument a few minutes before this observation.
(*g*) Not satisfactory: too much wind.
(*h*) At 1st and 5th wires. So also in the observation of α^2 Capricorni, taken with the other.
(*i*) The North shutters had been left closed one hour before this observation, which accounts for the rise of the free thermometer.
(*j*) Without coloured glass.
(*k*) Very bad motion.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
49,27	44 . 49 . 31,89	30,140	59,5	59,7	57,21				82 . 37 . 37,38	α Orionis R.
	44 . 49 . 31,93								82 . 37 . 37,42	α Orionis.
	38 . 23 . 29,42	30,150	62,7	61,7	45,45	16,59	12,774	28,33	76 . 10 . 38,59	Venus.
	33 . 29 59,93	30,132	63,7	64,0	37,78	3,56			71 . 17 . 42,43	Mercury.
	36 . 8 . 20,58	30,132	63,8	63,9	41,69	4,96		15 . 48,20	74 . 11 . 53,79	⊙.
	36 . 39 . 57,40				42,50	5,02			74 . 11 . 54,96	⊙.
48,63	32 . 9 . 53,66	30,106	64,5	64,2	35,86				69 . 57 . 37,80	Arcturus R.
	32 . 9 . 52,42								69 . 57 . 36,56	Arcturus.
49,27	24 . 26 . 11,28				25,91				62 . 13 . 45,47	ε Bootis R.
	24 . 26 . 11,32								62 . 13 . 45,51	ε Bootis.
	39 . 45 . 9,85	30,100	54,4	51,3	48,63	2,20			77 . 33 . 4,56	Pallas.
50,45	−9 . 40 . 35,96				9,98				28 . 6 . 22,34	α Cephei R.
	−9 . 40 . 33,47								28 . 6 . 24,83	α Cephei.
48,63	58 . 28 . 26,65				1 . 35,09				96 . 17 . 10,02	β Aquarii R.
	58 . 28 . 25,40								96 . 17 . 8,77	β Aquarii.
	63 . 16 . 50,25		53,0	49,4	1 . 56,15	0,40			101 . 5 . 54,28	Uranus.
	28 . 50 . 48,75	30,116	55,5	54,7	32,02	2,25			66 . 38 . 26,80	Mars.
	38 . 18 . 24,92	30,120	60,6	61,4	45,30	16,36	7,412	27,88	76 . 6 . 30,02	Venus.
	36 . 57 . 27,96	30,110	63,4	64,0	42,92	5,06		15 . 48,40	74 . 29 . 25,70	⊙.
	36 . 25 . 50,83				42,10	5,00			74 . 29 . 24,61	⊙.
48,48	37 . 37 . 7,09	30,122	61,7	59,7	44,34				75 . 24 . 59,71	α Herculis R.
	37 . 37 . 5,55								75 . 24 . 58,17	α Herculis.
48,94	39 . 30 . 54,91		60,4	58,5	47,57				77 . 18 . 50,76	α Ophiuchi R.
	39 . 30 . 54,28								77 . 18 . 50,13	α Ophiuchi.
49,66	− 34 . 21 . 57,64	30,138	59,2	56,9	39,59				3 . 24 . 31,05	δ Ursæ Min. R.
	− 34 . 21 . 56,83								3 . 24 . 31,86	δ Ursæ Minoris.
48,73	13 . 34 . 24,41				13,99				51 . 21 . 46,68	α Lyræ R.
	13 . 34 . 23,37								51 . 21 . 45,64	α Lyræ.
	79 . 43 . 30,13	30,150	55,8	53,2	5 . 11,25				117 . 35 . 49,66	59 Sagittarii.
48,52	65 . 11 . 15,73				2 . 5,58				103 . 0 . 29,59	α^1 Capricorni R.
	65 . 11 . 14,26								103 . 0 . 28,12	α^1 Capricorni.
48,35	65 . 13 . 32,20				2 . 5,80				103 . 2 . 46,28	α^2 Capricorni R.
	65 . 13 . 30,39								103 . 2 . 44,47	α^2 Capricorni.
	39 . 54 . 1,38	30,156	55,5	54,0	48,72	2,21			77 . 41 . 56,17	Pallas.
	36 . 43 . 36,08	30,245	62,0	63,0	42,83	5,02		15 . 48,60	74 . 47 . 10,77	⊙.
	37 . 15 . 12,62				43,66	5,08			74 . 47 . 10,88	⊙.
48,99	32 . 9 . 53,02	30,216	64,4	64,0	36,00				69 . 57 . 37,30	Arcturus R.
	32 . 9 . 52,50								69 . 57 . 36,78	Arcturus.
48,67	24 . 26 . 12,01				26,02				62 . 13 . 46,31	ε Bootis R.
	24 . 26 . 10,85								62 . 13 . 45,15	ε Bootis.
49,04	− 34 . 21 . 57,52	30,260	59,4	58,6	39,62				3 . 24 . 31,14	δ Urs. Min. R.
	− 34 . 21 . 57,95								3 . 24 . 30,71	δ Ursæ Minoris.
49,00	13 . 34 . 23,23				14,00				51 . 21 . 45,51	α Lyræ R.
	13 . 34 . 22,72								51 . 21 . 45,00	α Lyræ.
	38 . 9 . 44,92	30,258	60,0	60,3	45,37	15,89	7,508	26,82	75 . 57 . 49,50	Venus.
	37 . 33 . 13,07	30,250	63,7	64,0	44,05	5,13		15 . 48,70	75 . 5 . 11,57	⊙.
	37 . 1 . 35,63				43,22	5,07			75 . 5 . 10,76	⊙.

Coincidence of Micrometer Wire with fixed Wire = $10^r,073$. One revolution = 20″,843.
Correction for Runs = −2″,7.
Adopted Zenith Point = 195° . 9′ . 49″,25.
Assumed Co-latitude = 37° . 47′ . 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes. A	B	C	D	E	F	Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Aug. 12	(*a*) Arcturus R. M.	342 . 55	4 . 5,8	28,7	13,5	34,5	22,2	23,6	8,341	+ 36,10	342 . 59 . 57,08	G.
	Arcturus	227 . 15	4 . 28,3	49,5	33,9	52,8	41,4	43,7			227 . 19 . 41,18	G.
	ε Bootis R. M.	350 . 40	4 . 7,4	30,2	14,5	34,7	21,8	25,2	12,233	- 45,02	350 . 43 . 36,90	G.
	ε Bootis	219 . 35	0 . 48,7	68,5	53,0	73,9	59,5	63,8			219 . 36 . 1,15	G.
	(*b*) α¹ Capricorni R. M.	310 . 0	0 . 31,9	52,1	35,6	57,8	42,0	48,3	16,320	- 2 . 10,21 + 0,14	309 . 58 . 34,48	G.
	α¹ Capricorni	260 . 20	0 . 51,7	72,0	58,0	78,0	63,5	68,4		- 0,14	260 . 21 . 5,04	G.
	α² Capricorni R. M.	310 . 0	0 . 31,9	52,1	35,6	57,8	42,0	48,3	22,887	- 4 . 27,08 + 0,14	309 . 56 . 17,61	G.
	α² Capricorni M.	260 . 20	0 . 51,7	72,0	58,0	78,0	63,5	68,4	3,555	+ 2 . 15,86 - 0,14	260 . 23 . 20,90	G.
	Pallas	235 . 20	1 . 47,5	66,2	51,5	71,8	58,4	64,3			235 . 21 . 59,78	G.
	α Cephei R. M.	24 . 45	4 . 4,3	26,8	10,9	30,3	16,3	21,3	6,830	+ 1 . 7,59	24 . 50 . 25,52	G.
	α Cephei	185 . 25	4 . 0,4	19,8	5,4	26,2	10,7	17,7			185 . 29 . 12,98	G.
	Uranus	258 . 25	3 . 58,5	77,7	65,8	82,8	68,4	75,7			258 . 29 . 11,10	G.
	(*c*) Venus S.L.	233 . 15	0 . 46,9	68,5	53,1	73,9	59,6	64,2			233 . 16 . 0,93	G.
Aug. 13	⊙ N.L. M.	232 . 30	1 . 16,8	39,6	20,8	43,8	30,2	35,2	15,460	- 1 . 52,29	232 . 29 . 38,64	G.
	⊙ S.L.	233 . 0	1 . 4,2	27,2	9,7	31,1	18,3	22,8			233 . 1 . 18,77	G.
	(*d*) δ Ursæ Min. R. M.	49 . 30	2 . 6,8	28,8	11,1	33,8	20,8	24,5	11,603	- 31,89	49 . 31 . 48,86	G.
	δ Ursæ Minoris	160 . 45	2 . 40,0	59,4	43,3	63,7	51,0	55,3			160 . 47 . 51,85	G.
	α Lyræ R. M.	1 . 35	1 . 15,0	36,8	20,5	42,2	29,1	32,8	13,087	- 1 . 2,82	1 . 35 . 26,45	G.
	α Lyræ	208 . 40	4 . 1,0	21,0	5,7	25,2	12,2	16,5			208 . 44 . 13,22	G.
	Pallas	235 . 30	1 . 17,0	36,0	21,0	40,6	28,6	34,5			235 . 31 . 29,48	G.
	β Aquarii R. M.	316 . 40	2 . 10,5	31,4	15,5	36,4	21,8	27,8	13,042	- 1 . 1,89	316 . 41 . 21,79	G.
	β Aquarii	253 . 35	3 . 5,0	24,7	10,4	29,2	15,2	22,0			253 . 38 . 17,45	G.
	Uranus	258 . 25	4 . 52,8	72,2	58,8	78,0	63,1	71,1			258 . 30 . 5,82	G.
Aug. 15	δ Urs. Min. R. M.	49 . 30	2 . 7,0	27,8	10,5	33,0	18,5	23,8	11,573	- 31,16	49 . 31 . 48,67	G.
	δ Ursæ Minoris	160 . 45	2 . 37,2	57,4	40,9	61,7	47,3	53,5			160 . 47 . 49,33	G.
	α Lyræ R. M.	1 . 35	1 . 9,7	30,7	15,9	36,5	22,3	27,0	12,794	- 58,49	1 . 35 . 25,03	G.
	α Lyræ	208 . 40	3 . 59,4	79,0	64,8	84,4	70,3	75,3			208 . 44 . 11,72	G.
	(*b*) α¹ Capricorni R. M.	309 . 55	4 . 3,4	23,2	9,4	28,3	14,6	19,4	12,130	- 42,77 + 0,14	309 . 58 . 33,25	G.
	α¹ Capricorni	260 . 20	0 . 53,2	72,0	60,0	77,6	62,8	70,3		- 0,14	260 . 21 . 5,71	G.
	α² Capricorni R. M.	309 . 55	4 . 3,4	23,2	9,4	28,3	14,6	19,4	18,690	- 2 . 59,50 + 0,14	309 . 56 . 16,52	G.
	α² Capricorni M.	260 . 20	0 . 53,2	72,0	60,0	77,6	62,8	70,3	3,533	+ 2 . 16,41 - 0,14	260 . 23 . 22,12	G.
	Uranus	258 . 30	1 . 33,3	52,0	39,0	58,2	44,0	50,5			258 . 31 . 45,95	G.
Aug. 16	Pollux R. M.	351 . 20	3 . 9,3	30,3	16,4	36,3	24,1	27,4	12,895	- 58,72	351 . 22 . 24,85	G.
	Pollux	218 . 55	2 . 1,0	21,6	6,2	26,4	13,0	18,3			218 . 57 . 14,15	G.
	(*e*) Venus S.L.	232 . 55	2 . 38,4	58,4	42,0	63,4	50,3	54,3			232 . 57 . 50,80	G.
Aug. 17	⊙ N.L. M.	233 . 45	1 . 7,5	29,0	11,7	32,9	20,5	25,0	14,260	- 1 . 27,16	233 . 44 . 53,79	G.
	⊙ S.L.	234 . 15	1 . 18,7	41,1	22,3	43,5	31,0	35,5			234 . 16 . 31,83	G.
	(*f*) ε Bootis R. M.	350 . 40	4 . 3,6	25,3	9,9	31,8	18,7	22,2	12,018	- 40,43	350 . 43 . 37,65	G.
	ε Bootis	219 . 35	0 . 48,0	69,4	53,0	74,7	60,4	62,7			219 . 36 . 1,25	G.
	α Aquarii R. M.	321 . 50	0 . 19,1	39,4	23,7	45,2	31,8	37,3	6,947	+ 1 . 5,26	321 . 51 . 37,94	G.
	α Aquarii	248 . 25	2 . 48,8	67,3	54,5	73,3	59,8	65,4			248 . 28 . 1,17	G.
	Mars center	223 . 40	4 . 34,8	54,2	39,0	57,4	46,0	48,9			223 . 44 . 46,15	G.
	(*g*) Venus N.L.	232 . 50	2 . 22,7	43,8	26,0	47,9	33,8	39,7			232 . 52 . 35,35	G.

(*a*) The mercury waving.

(*b*) At the 1st and 5th wires. The next observation the same.

(*c*) The limb taken on fixed wire not fully illumined: correction applied accordingly.

(*d*) Unsteady: very unsatisfactory.

(*e*) The correction for defect of illumination here becomes insensible.

(*f*) Hurried: clouds flying over.

(*g*) Cloudy: ill-defined.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
49,13	32 . 9 . 52,17	30,194	65,0	65,9	35,84				69 . 57 . 36,29	Arcturus R.
	32 . 9 . 51,93								69 . 57 . 36,05	Arcturus.
49,03	24 . 26 . 12,35		65,6	66,8	25,86				62 . 13 . 46,49	ε Bootis R.
	24 . 26 . 11,90								62 . 13 . 46,04	ε Bootis.
49,76	65 . 11 . 14,77	30,208	59,5	57,0	2 . 4,85				103 . 0 . 27,90	α^1 Capricorni R.
	65 . 11 . 15,79								103 . 0 . 28,92	α^1 Capricorni.
49,26	65 . 13 . 31,64				2 . 5,07				103 . 2 . 44,99	α^2 Capricorni R.
	65 . 13 . 31,65								103 . 2 . 45,00	α^2 Capricorni.
	40 . 12 . 10,53		58,2	55,5	49,17	2,23			78 . 0 . 5,75	Pallas.
49,25	− 9 . 40 . 36,27				9,93				28 . 6 . 22,08	α Cephei R.
	− 9 . 40 . 36,27								28 . 6 . 22,08	α Cephei.
	63 . 19 . 21,85	30,178	54,7	51,5	1 . 56,16	0,40			101 . 8 . 25,89	Uranus.
	38 . 6 . 11,68	30,124	62,4	64,4	44,72	15,65	12,700	27,31	75 . 53 . 21,72	Venus.
	37 . 19 . 49,39	30,096	65,4	68,3	43,12	5,11		15 . 48,90	75 . 23 . 24,58	☉.
	37 . 51 . 29,52				43,95	5,17			75 . 23 . 27,68	☉.
50,36	− 34 . 21 . 59,61	29,950	62,7	61,3	39,01				3 . 24 . 29,66	δ Urs. Min. R.
	− 34 . 21 . 57,40								3 . 24 . 31,87	δ Ursæ Minoris.
49,84	13 . 34 . 22,80				13,78				51 . 21 . 44,86	α Lyræ R.
	13 . 34 . 23,97								51 . 21 . 46,03	α Lyræ.
	40 . 21 . 40,23	29,920	59,7	58,5	48,69	2,24			78 . 9 . 34,96	Pallas.
49,62	58 . 28 . 27,46			57,5	1 . 33,35				96 . 17 . 9,09	β Aquarii R.
	58 . 28 . 28,20								96 . 17 . 9,83	β Aquarii.
	63 . 20 . 16,57	29,892	59,5	58,1	1 . 53,62	0,40			101 . 9 . 18,07	Uranus.
49,00	− 34 . 21 . 59,42	29,980	63,2	61,3	39,05				3 . 24 . 29,81	δ Urs. Min. R.
	− 34 . 21 . 59,92								3 . 24 . 29,31	δ Ursæ Minoris.
48,38	13 . 34 . 24,22				13,79				51 . 21 . 46,29	α Lyræ R.
	13 . 34 . 22,47								51 . 21 . 44,54	α Lyræ.
49,48	65 . 11 . 16,00	30,000	60,8	58,6	2 . 3,61				103 . 0 . 27,89	α^1 Capricorni R.
	65 . 11 . 16,46								103 . 0 . 28,35	α^1 Capricorni.
49,32	65 . 13 . 32,73				2 . 3,82				103 . 2 . 44,83	α^2 Capricorni R.
	65 . 13 . 32,87								103 . 2 . 44,97	α^2 Capricorni.
	63 . 21 . 56,70	30,022	58,4	55,5	1 . 54,84	0,40			101 . 10 . 59,42	Uranus.
49,50	23 . 47 . 24,40	29,986	64,8	66,3	24,94				61 . 34 . 57,62	Pollux R.
	23 . 47 . 24,90								61 . 34 . 58,12	Pollux.
	37 . 48 . 1,55				43,86	14,67	12,474	24,97	75 . 35 . 14,05	Venus.
	38 . 35 . 4,54	29,990	66,5	68,6	44,92	5,25		15 . 49,70	76 . 38 . 42,19	☉.
	39 . 6 . 42,58				45,77	5,31			76 . 38 . 41,62	☉.
49,45	24 . 26 . 11,60	29,986	68,0	70,1	25,52				62 . 13 . 45,40	ε Bootis R.
	24 . 26 . 12,00								62 . 13 . 45,80	ε Bootis.
49,56	53 . 18 . 11,31	30,012	60,7	58,1	1 . 17,05				91 . 6 . 36,64	α Aquarii R.
	53 . 18 . 11,92								91 . 6 . 37,25	α Aquarii.
	28 . 34 . 56,90	29,950	61,2	60,8	31,12	2,28			66 . 22 . 34,02	Mars.
	37 . 42 . 46,10	29,916	63,1	63,4	43,87	14,42	7,820	23,54	75 . 30 . 47,37	Venus.

Coincidence of Micrometer Wire with fixed Wire = $10^r,073$. From Aug. 15. = $10^r,078$. One revolution = 20″,843.
Correction for Runs = −2″,7. From Aug. 15. = −3″,5.
Adopted Zenith Point = 195° . 9′ . 49″,25.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Coincidence of wires taken Aug. 15, 22^h.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Aug. 18	⊙ S.L. M.	234 . 35	2 . 9,0	30,0	13,9	33,4	19,5	25,8	14,359	− 1 . 29,23	234 . 35 . 52,44	G.
	⊙ N.L.	234 . 0	4 . 1,0	20,8	6,0	24,8	13,8	16,5			234 . 4 . 13,32	G.
	(*a*) ☽ N.L.	262 . 25	0 . 43,1	64,8	48,6	70,0	55,7	59,8			262 . 25 . 56,90	G.
Aug. 19	(*b*) δ Urs. Min. R. M.	49 . 30	2 . 23,4	44,0	26,1	49,1	34,2	40,0	12,323	− 46,79	49 . 31 . 49,04	G.
	δ Ursæ Minoris	160 . 45	2 . 38,7	58,0	42,4	62,3	47,3	53,2			160 . 47 . 49,98	G.
	α Lyræ R. M.	1 . 35	1 . 14,6	35,2	22,5	40,8	27,0	30,8	12,930	− 59,44	1 . 35 . 28,86	G.
	α Lyræ	208 . 40	4 . 1,8	19,8	6,5	25,8	10,7	16,2			208 . 44 . 12,98	G.
	Pallas	236 . 30	1 . 1,6	21,2	8,3	26,8	11,8	19,0			236 . 31 . 14,65	G.
	(*c*) α Cephei R. M.	24 . 50	0 . 12,0	34,0	18,0	39,7	23,4	30,5	9,958	+ 2,50	24 . 50 . 28,72	G.
	α Cephei	185 . 25	3 . 59,4	78,0	65,1	84,2	67,6	76,4			185 . 29 . 11,30	G.
	α Aquarii R. M.	321 . 50	0 . 27,8	47,8	34,0	53,7	39,7	45,1	7,245	+ 59,05	321 . 51 . 40,32	G.
	α Aquarii	248 . 25	2 . 47,8	65,4	54,3	71,0	57,3	63,8			248 . 27 . 59,58	G.
	(*d*) Uranus	258 . 30	4 . 58,0	75,7	65,0	81,8	66,2	75,8			258 . 35 . 10,40	G.
	Ceres	265 . 35	4 . 25,8	44,8	32,4	48,7	34,8	41,1			265 . 39 . 37,40	G.
Aug. 21	(*e*) ☽ S.L. M.	275 . 0	4 . 5,7	26,0	11,8	31,1	15,2	22,7	15,373	− 1 . 50,37 + 2,62	275 . 2 . 30,50	G.
	☽ S.L. M.	275 . 0	4 . 5,7	26,0	11,8	31,1	15,2	22,7	15,260	− 1 . 48,01 + 1,31	275 . 2 . 31,55	G.
	☽ N.L.	274 . 25	4 . 46,9	67,8	55,0	72,8	58,9	62,7			274 . 30 . 0,10	G.
	☽ N.L. M.	274 . 25	4 . 46,9	67,8	55,0	72,8	58,9	62,7	9,944	+ 2,79 − 1,31	274 . 30 . 1,56	G.
	☽ N.L. M.	274 . 25	4 . 46,9	67,8	55,0	72,8	58,9	62,7	9,905	+ 3,60 − 2,62	274 . 30 . 1,06	G.
	(*f*) α Lyncis SP. R. M.	81 . 20	4 . 16,2	35,5	21,1	41,5	26,9	33,6	18,572	− 2 . 57,04	81 . 21 . 31,56	J.G.
	α Lyncis SP.	128 . 55	2 . 58,4	78,0	64,4	83,7	68,0	75,3			128 . 58 . 10,93	J.G.
	δ Urs. Min. R. M.	49 . 30	2 . 5,2	26,3	10,7	31,4	18,9	24,2	11,491	− 29,45	49 . 31 . 49,73	J.G.
	δ Ursæ Minoris	160 . 45	2 . 38,8	59,1	45,9	63,7	49,5	55,3			160 . 47 . 51,72	J.G.
	α Lyræ R. M.	1 . 35	1 . 9,0	30,1	17,0	36,7	23,3	27,4	12,769	− 56,10	1 . 35 . 27,65	J.G.
	α Lyræ	208 . 40	3 . 59,1	77,9	65,0	83,2	68,8	74,0			208 . 44 . 10,85	J.G.
Aug. 22	⊙ S.L. M.	235 . 55	2 . 25,0	44,0	29,7	49,9	37,3	41,9	16,771	− 2 . 19,51	235 . 55 . 18,16	G.
	⊙ N.L.	235 . 20	3 . 26,2	46,2	30,0	49,8	36,2	40,9			235 . 23 . 37,80	G.
Aug. 24	(*g*) ⊙ S.L. M.	236 . 35	2 . 13,8	15,5	10,9	12,0	13,5	11,6	13,717	− 1 . 15,89	236 . 35 . 56,88	G.
	⊙ N.L.	236 . 0	4 . 16,0	17,0	13,3	13,7	16,5	14,2			236 . 4 . 14,87	G.
	α Herculis R. M.	337 . 30	4 . 7,0	9,8	6,5	5,2	8,5	5,0	14,548	− 1 . 33,21	337 . 32 . 33,56	G.
	α Herculis	232 . 45	1 . 45,0	46,4	40,3	42,8	42,3	43,9			232 . 46 . 43,35	G.
	α Lyræ R. M.	1 . 35	1 . 18,2	21,0	18,0	18,0	19,8	17,1	12,972	− 1 . 0,37	1 . 35 . 18,25	G.
	α Lyræ	208 . 40	3 . 61,6	62,8	58,8	59,0	59,4	58,4			208 . 43 . 59,77	G.
	ψ Capricorni	273 . 5	4 . 13,8	15,7	13,8	12,4	12,7	11,0			273 . 9 . 13,00	G.
	(*h*) ☽ S.L.	271 . 15	2 . 17,2	17,8	14,7	14,6	13,6	15,8		− 6,14	271 . 17 . 9,34	G.
	☽ S.L. M.	271 . 15	2 . 17,2	17,8	14,7	14,6	13,6	15,8	10,245	− 3,52 − 3,07	271 . 17 . 8,89	G.
	☽ S.L. M.	271 . 15	2 . 17,2	17,8	14,7	14,6	13,6	15,8	10,383	− 6,40	271 . 17 . 9,08	G.
	☽ S.L. M	271 . 15	2 . 17,2	17,8	14,7	14,6	13,6	15,8	10,494	− 8,72 + 3,07	271 . 17 . 9,83	G.
	☽ S.L. M.	271 . 15	2 . 17,2	17,8	14,7	14,6	13,6	15,8	10,662	− 12,22 + 6,14	271 . 17 . 9,40	G.
	ζ Capricorni M.	270 . 25	2 . 20,4	20,8	17,4	17,3	16,0	18,7	14,718	− 1 . 36,79	270 . 25 . 41,51	G.
	β Aquarii R. M.	316 . 40	2 . 17,0	18,0	14,8	14,8	15,0	15,2	13,068	− 1 . 2,37	316 . 41 . 13,30	G.
	β Aquarii	253 . 35	3 . 5,6	4,8	2,5	0,5	1,8	2,2			253 . 38 . 2,73	G.
	γ Capricorni	264 . 40	3 . 41,8	41,5	39,0	38,7	38,8	39,7			264 . 43 . 39,72	G.
	Uranus	258 . 35	4 . 19,7	18,6	16,7	16,8	16,0	18,0			258 . 39 . 17,38	G.

(*a*) Doubtful.
(*b*) Blur: not good.
(*c*) Micrometer wire too near the fixed wire to see the star clearly.
(*d*) No correction for runs.
(*e*) At the five wires. Correction to S.L. for defect of illumination = + 0″,28. The change of declination being very slow, the micrometer wire was too near the fixed wire to see the N.L. clearly.
(*f*) Extremely faint.
(*g*) The Microscopes adjusted before this observation.
(*h*) At the five wires. Much waving of the limb.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	39 . 26 . 3,19	29,886	68,0	68,9	46,10	5,36		15 . 49,90	76 . 58 . 2,31	⊙.
	38 . 54 . 24,07				45,25	5,30			76 . 58 . 2,20	⊙.
	67 . 16 . 7,65	29,800	66,4	66,5	2 . 13,23	53 . 21,94		15 . 49,07	104 . 27 . 56,29	☽.
49,51	– 34 . 21 . 59,79	30,060	59,5	58,0	39,41				3 . 24 . 29,08	δ Urs. Min. R.
	– 34 . 21 . 59,27								3 . 24 . 29,60	δ Ursæ Minoris.
50,92	13 . 34 . 20,39				13,92				51 . 21 . 42,59	α Lyræ R.
	13 . 34 . 23,73								51 . 21 . 45,93	α Lyræ.
	41 . 21 . 25,40	30,032	57,0	53,3	51,13	2,28			79 . 9 . 22,53	Pallas.
50,01	– 9 . 40 . 39,47				9,91				28 . 6 . 18,90	α Cephei R.
	– 9 . 40 . 37,95								28 . 6 . 20,42	α Cephei.
49,95	53 . 18 . 8,93	30,006	55,4	50,9	1 . 18,15				91 . 6 . 35,36	α Aquarii R.
	53 . 18 . 10,33								91 . 6 . 36,76	α Aquarii.
	63 . 25 . 21,15		54,6	51,3	1 . 56,04	0,40			101 . 14 . 25,07	Uranus.
	70 . 29 . 48,15	29,964	54,0	52,7	2 . 42,49	3,95			108 . 19 . 34,97	Ceres.
	79 . 52 . 41,25	29,798	59,8	58,2	5 . 8,87	58 . 35,97			116 . 30 . 7,13	☽.
	79 . 52 . 42,30								116 . 30 . 8,18	☽.
	79 . 20 . 10,85							16 . 15,58	116 . 29 . 58,98	☽.
	79 . 20 . 12,31				4 . 53,80	58 . 29,53			116 . 30 . 0,44	☽.
	79 . 20 . 11,81								116 . 29 . 59,94	☽.
51,25	– 66 . 11 . 42,31			58,0	2 . 8,76				– 28 . 26 . 42,79	α Lyncis SP. R.
	– 66 . 11 . 38,32								– 28 . 26 . 38,80	α Lyncis SP.
50,73	– 34 . 22 . 0,48	29,786	58,2	56,2	39,19				3 . 24 . 28,61	δ Urs. Min. R.
	– 34 . 21 . 57,53								3 . 24 . 31,56	δ Ursæ Minoris.
49,25	13 . 34 . 21,60				13,84				51 . 21 . 43,72	α Lyræ R.
	13 . 34 . 21,60								51 . 21 . 43,72	α Lyræ.
	40 . 45 . 28.91	29,633	60,9	62,3	48.54	5,51		15 . 50,70	78 . 17 . 29,52	⊙.
	40 . 13 . 48,55				47,65	5,45			78 . 17 . 29,73	⊙.
	41 . 26 . 18,27	29,984	59,5	60,4	50,49	5,59		15 . 51,10	78 . 58 . 20,35	⊙.
	40 . 54 . 36,26				49,57	5,53			78 . 58 . 19,68	⊙.
38,46	37 . 37 . 5,05	30,062	57,4	55,7	44,61				75 . 24 . 57,94	α Herculis R.
	37 . 37 . 4,74								75 . 24 . 57,63	α Herculis.
39,01	13 . 34 . 20,36	30,084	55,0	53,8	14,05				51 . 21 . 42,69	α Lyræ R.
	13 . 34 . 21,16								51 . 21 . 43,49	α Lyræ.
	77 . 59 . 34,39	30,108	53,7	50,S	4 . 28,59				115 . 51 . 11,26	ψ Capricorni.
	76 . 7 . 30,73		53,4	49,6					112 . 43 . 54,99	☽.
	76 . 7 . 30,28								112 . 43 . 54,54	☽.
	76 . 7 . 30,47				3 . 53,33	58 . 14,08		16 . 23,27	112 . 43 . 54,73	☽.
	76 . 7 . 31,22								112 . 43 . 55,48	☽.
	76 . 7 . 30,79								112 . 43 . 55,05	☽.
	75 . 16 . 2,90			49,2	3 . 39,81				113 . 6 . 50,99	ζ Capricorni.
38,02	58 . 28 . 25,31				1 . 35,51				96 . 17 . 9,10	β Aquarii R.
	58 . 28 . 24,12								96 . 17 . 7,91	β Aquarii.
	69 . 34 . 1,11				2 . 36,44				107 . 23 . 45,83	γ Capricorni.
	63 . 29 . 38,77		51,5	47,8	1 . 57,64	0,40			101 . 18 . 44,29	Uranus.

Coincidence of Micrometer Wire with fixed Wire = 10ʳ,078. From Aug. 24. = 10ʳ,076. One revolution = 20″,843.
Correction for Runs = – 3″,5. From Aug. 24. = – 1″,7.
Adopted Zenith Point = 195° . 9′ . 49″,25. From Aug. 24. = 195° . 9′ . 38″,61.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Runs and coincidence of wires taken Aug. 24. 22ʰ.
Change of Zenith point on adjusting the Microscopes.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Aug. 24	Ceres	266 . 10	3 . 12,2	13,7	12,2	9,4	9,3	10,3			266 . 13 . 11,00	G.
	Mars center	223 . 40	0 . 28,6	29,5	25,3	27,4	28,2	26,4			223 . 40 . 27,53	G.
Aug. 25	(*a*) α^1 Capricorni R. M.	309 . 55	3 . 4,0	8,0	2,0	3,3	3,2	2,4	9,204	+ 18,17 + 0,14	309 . 58 . 21,94	G.
	α^1 Capricorni	260 . 20	0 . 56,5	59,4	55,0	55,2	55,2	55,3		− 0,14	260 . 20 . 55,91	G.
	(*a*) α^2 Capricorni R. M.	309 . 55	3 . 4,0	8,0	2,0	3,3	3,2	2,4	15,756	− 1 . 58,40 + 0,14	309 . 56 . 5,37	G.
	α^2 Capricorni M.	260 . 20	0 . 56,5	59,4	55,0	55,2	55,2	55,3	3,574	+ 2 . 15,52 − 0,14	260 . 23 . 11,43	G.
	ψ Capricorni	273 . 5	4 . 18,3	21,0	17,0	17,0	16,1	16,8			273 . 9 . 17,47	G.
	(*b*) Pallas	237 . 35	1 . 32,8	33,5	28,6	29,0	30,4	32,1			237 . 36 . 30,98	G.
	α Cephei R. M.	24 . 50	0 . 13,7	18,8	11,6	14,5	14,3	14,6	9,863	+ 4,44	24 . 50 . 19,01	G.
	α Cephei	185 . 25	3 . 59,7	61,2	57,0	58,6	58,0	59,2			185 . 28 . 58,72	G.
	(*c*) ζ Capricorni	270 . 25	0 . 47,0	50,8	45,0	46,8	45,6	47,0		− 0,26	270 . 25 . 46,72	G.
	γ Capricorni	264 . 40	3 . 44,0	45,9	42,2	42,2	43,1	43,2			264 . 43 . 43,22	G.
	(*d*) ☽ S.L.	266 . 25	3 . 22,0	23,8	20,8	19,8	20,0	21,1		− 7,80	266 . 28 . 13,27	G.
	☽ S.L. M.	266 . 25	3 . 22,0	23,8	20,8	19,8	20,0	21,1	10,254	− 3,71 − 3,90	266 . 28 . 13,46	G.
	☽ S.L. M.	266 . 25	3 . 22,0	23,8	20,8	19,8	20,0	21,1	10,464	− 8,09	266 . 28 . 12,98	G.
	☽ S.L. M.	266 . 25	3 . 22,0	23,8	20,8	19,8	20,0	21,1	10,643	− 11,82 + 3,90	266 . 28 . 13,15	G.
	☽ S.L. M.	266 . 25	3 . 22,0	23,8	20,8	19,8	20,0	21,1	10,795	− 14,99 + 7,80	266 . 28 . 13,88	G.
Aug. 26	α Ophiuchi R. M.	335 . 35	4 . 7,8	11,0	6,7	7,8	9,2	6,8	11,168	− 22,76	335 . 38 . 45,22	G.
	α Ophiuchi	234 . 40	0 . 33,3	36,3	29,4	31,8	33,6	34,7			234 . 40 . 33,15	G.
	δ Urs. Min. R. M.	49 . 30	2 . 11,7	15,0	7,8	11,3	12,4	11,4	11,602	− 31,81	49 . 31 . 39,67	G.
	δ Ursæ Minoris	160 . 45	2 . 39,8	42,3	36,7	37,4	38,9	39,7			160 . 47 . 38,98	G.
	α Lyræ R. M.	1 . 35	1 . 11,4	14,5	10,4	12,8	13,0	11,4	12,716	− 55,03	1 . 35 . 17,15	G.
	α Lyræ	208 . 40	3 . 59,4	62,5	58,4	58,0	59,6	57,7			208 . 43 . 59,03	G.
	(*e*) ☽ S.L.	260 . 35	0 . 21,8	24,0	19,0	20,8	21,7	22,3			260 . 35 . 21,58	G.
	☽ S.L. M.	260 . 35	0 . 21,8	24,0	19,0	20,8	21,7	22,3	10,543	− 9,74 + 8,68	260 . 35 . 20,52	G.
	Mars center	223 . 40	0 . 53,6	56,5	52,0	52,7	53,3	52,1			223 . 40 . 53,32	G.
	Venus S.L.	232 . 15	3 . 56,4	59,9	54,7	56,0	57,8	55,0			232 . 18 . 56,42	G.
Aug. 27	⊙ N.L. M.	237 . 5	3 . 11,2	14,5	7,5	9,7	11,8	10,2	14,170	− 1 . 25,38	237 . 6 . 45,10	G.
	⊙ S.L.	237 . 35	3 . 29,3	33,0	25,8	29,2	32,0	29,0			237 . 38 . 29,35	G.
	β Lyræ R. M.	356 . 5	3 . 14,8	18,2	14,3	15,9	16,8	14,4	11,190	− 23,26	356 . 7 . 52,12	G.
	β Lyræ	214 . 10	1 . 25,0	27,3	19,7	22,9	24,0	24,3			214 . 11 . 23,72	G.
	α Aquilæ R. M.	331 . 25	0 . 15,8	20,2	14,0	16,3	18,0	18,0	13,012	− 1 . 1,25	331 . 24 . 15,77	G.
	(*f*) α Aquilæ	238 . 50	4 . 61,3	63,7	58,0	59,6	60,4	62,1			238 . 55 . 0,85	G.
	ϕ Aquarii	254 . 15	1 . 33,0	34,3	31,2	31,4	33,5	32,5			254 . 16 . 32,48	G.
	ψ^3 Aquarii	257 . 50	0 . 45,3	47,8	42,4	43,3	44,0	44,9			257 . 50 . 44,55	G.
	(*g*) ☽ S.L. M.	254 . 5	2 . 9,3	11,2	8,0	7,2	8,4	8,3	4,560	+ 1 . 54,93 − 8,94	254 . 8 . 54,51	G.
	☽ S.L. M.	254 . 5	2 . 9,3	11,2	8,0	7,2	8,4	8,3	4,760	+ 1 . 50,76 − 4,47	254 . 8 . 54,81	G.
	☽ N.L.	253 . 35	1 . 43,0	45,4	39,5	40,7	41,4	41,2			253 . 36 . 41,68	G.
	☽ N.L. M.	253 . 35	1 . 43,0	45,4	39,5	40,7	41,4	41,2	10,342	− 5,59 + 4,47	253 . 36 . 40,56	G.
	☽ N.L. M.	253 . 35	1 . 43,0	45,4	39,5	40,7	41,4	41,2	10,615	− 11,27 + 8,94	253 . 36 . 39,35	G.

(*a*) At the 1st and 5th wires. The reflection observation of the second star very faint.

(*b*) Exceedingly faint.

(*c*) At the 5th wire.

(*d*) At the five wires.

(*e*) At the 3d and 5th wires. Both observations doubtful on account of clouds.

(*f*) No correction for runs.

(*g*) The S.L. at 1st and 2d wires: the N.L. at the 3d, 4th, and 5th wires. The correction for defect of illumination of S.L. = + 2″,85.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	71 . 3 . 32,39	30,102	50,7	47,3	2 . 50,22	4,01			108 . 53 . 26,88	Ceres.
	28 . 30 . 48,92	30,080	53,7	53,2	31,64	2,32			66 . 18 . 26,52	Mars.
38,93	65 . 11 . 16,67	29,920	57,3	55,4	2 . 4,09				103 . 0 . 29,04	α^1 Capricorni R.
	65 . 11 . 17,30								103 . 0 . 29,67	α^1 Capricorni.
38,40	65 . 13 . 33,22				2 . 4,30				103 . 2 . 45,80	α^2 Capricorni R.
	65 . 13 . 32,82								103 . 2 . 45,40	α^2 Capricorni.
	77 . 59 . 38,86			55,0	4 . 24,65	2,32			115 . 51 . 11,79	ψ Capricorni.
	42 . 26 . 52,37				52,76				80 . 14 . 51,09	Pallas.
38,87	− 9 . 40 . 40,40	29,912	56,4	54,7	9,85				28 . 6 . 18,03	α Cephei R.
	− 9 . 40 . 39,89								28 . 6 . 18,54	α Cephei.
	75 . 16 . 8,11				3 . 36,00				113 . 6 . 52,39	ζ Capricorni.
	69 . 34 . 4,61				2 . 33,72				107 . 23 . 46,61	γ Capricorni.
	71 . 18 . 34,66	29,906	55,8	52,9					107 . 55 . 42,74	☽.
	71 . 18 . 34,85								107 . 55 . 42,93	☽.
	71 . 18 . 34,37				2 . 49,55	56 . 31,35		16 . 18,40	107 . 55 . 42,45	☽.
	71 . 18 . 34,54								107 . 55 . 42,62	☽.
	71 . 18 . 35,27								107 . 55 . 43,35	☽.
39,19	39 . 30 . 53,39	29,906	59,8	58,8	47,20				77 . 18 . 48,87	α Ophiuchi R.
	39 . 30 . 54,54								77 . 18 . 50,02	α Ophiuchi.
39,33	− 34 . 22 . 1,06	29,930	58,8	57,2	39,30				3 . 24 . 27,92	δ Urs. Min. R.
	− 34 . 21 . 59,63								3 . 24 . 29,35	δ Ursæ Minoris.
38,09	13 . 34 . 21,46				13,88				51 . 21 . 43,62	α Lyræ R.
	13 . 34 . 20,42								51 . 21 . 42,58	α Lyræ.
	65 . 25 . 42,97		56,2	54,9	2 . 5,63	53 . 45,88		16 . 9,79	102 . 5 . 1,21	☽.
	65 . 25 . 41,91								102 . 5 . 0,15	☽.
	28 . 31 . 14,71	29,800	57,1	57,3	31,10	2,34			66 . 18 . 51,75	Mars.
	37 . 9 . 17,81	29,780	60,3	61,0	43,01	12,40	12,162	21,75	74 . 56 . 34,95	Venus.
37,92	41 . 57 . 6,49	29,774	65,7	65,7	50,51	5,65		15 . 51,70	80 . 0 . 51,33	⊙.
	42 . 28 . 50,74				51,46	5,71			80 . 0 . 53,07	⊙.
38,31	19 . 1 . 46,49	29,912	61,3	59,2	19,74				56 . 49 . 14,51	β Lyræ R.
	19 . 1 . 45,11								56 . 49 . 13,13	β Lyræ.
	43 . 45 . 22,84	29,920	58,8	56,3	55,08				81 . 33 . 26,20	α Aquilæ R.
	43 . 45 . 22,24								81 . 33 . 25,60	α Aquilæ.
	59 . 6 . 53,87	29,928	55,0	52,1	1 . 36,80				96 . 55 . 38,95	φ Aquarii.
	62 . 41 . 5,94				1 . 51,97				100 . 30 . 6,19	ψ^3 Aquarii.
	58 . 59 . 15,90				1 . 36,31	50 . 2,60			95 . 42 . 2,88	☽.
	58 . 59 . 16,20								95 . 42 . 3,18	☽.
	58 . 27 . 3,07							15 . 58,23	95 . 41 . 58,67	☽.
	58 . 27 . 1,95				1 . 34,31	49 . 45,22			95 . 41 . 57,55	☽.
	58 . 27 . 0,74								95 . 41 . 56,34	☽.

Coincidence of Micrometer Wire with fixed Wire = 10^r,076. From Aug. 27. = 10^r,074. One revolution = 20″,843.
Correction for Runs = − 1″,7. From Aug. 27. = − 3″,2.
Adopted Zenith Point = 195° . 9′ . 38″,61.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Runs and coincidence of wires taken Aug. 28. 22^h.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Aug. 28	Mars center.........	223.40	1.61,8	63,8	60,0	60,1	61,2	58,5			223.42. 0,68	G.
	(a) Pollux R. M.	351.20	3.11,2	15,0	11,0	11,2	13,4	10,0	12,917	−59,25 −0,32	351.22.12,05	G.
	Pollux................	218.55	2. 6,3	8,5	3,8	3,8	5,0	3,8		+0,32	218.57. 5,30	G.
	Venus S.L..........	232.10	3.41,5	44,2	38,2	40,7	41,0	39,8			232.13.40,50	G.
Aug. 29	⊙ N.L. M.	237.45	4.44,0	46,6	39,8	41,4	44,7	41,2	11,550	−30,77	237.49.11,68	G.
	⊙ S.L.	238.20	0.61,0	64,0	57,2	57,9	61,0	58,2			238.20.59,77	G.
	Pallas..................	238.20	2.29,0	30,0	24,0	25,9	30,2	27,7			238.22.27,53	G.
Aug. 30	Venus S.L..........	232. 5	4.38,7	42,0	35,6	37,4	39,7	37,0			232. 9.37,90	G.
	(b) Jupiter S.L.........	228.15	2.15,8	19,0	13,4	14,8	17,0	14,2			228.17.15,45	G.
Aug. 31	(c) ⊙ N.L. M.	238.30	3.18,5	25,9	13,7	22,0	20,7	19,7	13,050	−1. 2,04	238.32.17,69	G.
	⊙ S.L.	239. 0	4. 3,1	9,2	0,0	3,8	6,3	2,0			239. 4. 3,63	G.
	Mercury center	244.15	0. 8,2	12,2	5,0	7,6	10,2	7,5			244.15. 8,43	G.
	α Ophiuchi R. M..	335.35	4. 5,0	8,7	2,8	5,3	8,2	3,4	11,145	−22,32	335.38.42,81	G.
	α Ophiuchi	234.40	0.34,4	36,0	30,0	31,8	34,2	34,0			234.40.33,33	G.
	δ Urs. Min. R. M...	49.30	2. 9,8	15,2	6,4	11,0	13,4	10,4	11,504	−29,81	49.31.40,99	G.
	δ Ursæ Minoris.....	160.45	2.37,8	41,3	33,8	36,7	38,1	38,0			160.47.37,33	G.
	α Lyræ R. M........	1.35	1.11,4	16,0	10,3	12,0	14,3	11,3	12,726	−55,28	1.35.17,14	G.
	α Lyræ................	208.40	3.59,9	61,8	56,4	57,0	59,3	56,8			208.43.58,10	G.
	Pallas	238.45	1. 4,8	5,8	2,6	2,3	4,9	4,8			238.46. 4,08	G.
	υ U. Maj. SP. R. M.	83. 5	2. 8,7	12,5	6,6	11,1	9,7	8,2	12,897	−58,84	83. 6.10,39	G.
	υ Ursæ Majoris SP.	127.10	3. 9,4	12,5	5,0	8,5	8,2	7,8			127.13. 8,23	G.
	Uranus	258.45	0.19,8	22,2	17,4	18,5	19,4	20,4			258.45.19,58	G.
	(d) α Urs. Maj. SP. R. M............	80.15	2. 9,5	14,6	8,3	12,0	11,1	10,8	11,590	−31,60 +1,16	80.16.40,38	G.
	α Ursæ Majoris SP.	130. 0	2.40,7	44,8	36,8	40,3	40,0	40,0		−1,16	130. 2.38,92	G.
	ϕ Aquarii	254.15	1.34,5	36,0	31,4	33,2	35,2	33,1			254.16.33,73	G.
	ψ^3 Aquarii...........	257.50	0.46,8	49,2	42,9	44,3	45,2	46,2			257.50.45,68	G.
	Ceres..................	266.55	3.46,4	49,0	44,0	44,7	46,2	44,4			266.58.45,38	G.
	Mars center.........	223.40	4.59,0	61,5	56,0	57,8	59,0	55,0			223.44.57,52	G.
	Venus N.L..........	232. 5	2.28,0	30,4	22,4	28,2	27,0	26,0			232. 7.26,73	G.
Sept. 1	⊙ N.L. M.	238.55	0.13,5	14,6	10,0	13,6	15,0	13,6	13,472	−1.10,83	238.54. 2,52	G.
	⊙ S.L.	239.25	0.49,5	52,4	45,4	48,5	49,3	48,4			239.25.48,83	G.
	Mercury center	245. 0	0.32,7	34,8	28,0	32,0	32,4	31,2			245. 0.31,80	G.
	β Lyræ R. M.......	356. 5	3.14,8	17,4	14,3	14,7	16,5	12,8	11,117	−21,73	356. 7.53,00	G.
	β Lyræ	214.10	1.25,5	26,8	19,7	23,5	25,3	23,3			214.11.23,87	G.
	A. S. C. 874. SP. R. M............	60.10	4.11,2	16,2	8,4	12,0	15,2	10,8	11,059	−20,53	60.13.51,32	G.
	A. S. C. 874. SP...	150. 5	0.24,5	26,2	19,6	24,0	24,0	25,0			150. 5.23,82	G.
	Pallas.................	238.55	2.60,7	60,9	58,2	58,3	60,3	60,0			238.57.59,42	G.
Sept. 2	α Lyræ R. M........	1.35	1.14,2	19,0	15,4	16,5	16,4	14,5	12,850	−57,87	1.35.18,00	G.
	α Lyræ................	208.40	3.58,5	62,0	57,8	58,5	60,0	55,4			208.43.58,27	G.
	Pallas M.............	239.10	2.48,9	51,2	47,9	46,4	49,3	47,5	18,282	−2.51,08	239. 9.57,15	G.
	(e) α Cephei R. M......	24.50	0.10,5	15,0	9,7	11,2	9,8	10,2	9,508	+11,80	24.50.22,85	G.
	α Cephei	185.25	3.54,9	57,0	53,3	54,0	53,3	52,4			185.28.53,73	G.
	υ U. Maj. SP. R. M.	83. 5	2. 4,2	6,2	3,2	3,3	1,3	2,0	12,902	−58,95	83. 6. 4,20	G.
	υ Ursæ Majoris SP.	127.10	3. 8,8	10,3	6,3	6,4	6,8	5,4			127.13. 7,00	G.
	Uranus	258.45	1.55,4	57,0	56,2	53,1	54,2	53,8			258.46.54,75	G.
	Ceres..................	267.10	0.56,8	57,6	56,2	54,7	54,0	53,4			267.10.55,35	G.
	Jupiter S.L.........	228.25	0.59,7	64,2	58,4	59,3	58,0	56,9			228.25.59,32	G.

(a) At the 1st and 5th wires. (b) Very faint.

(c) Very unsteady and ill-defined.

(d) Not very good. The reflection observation a little before, and the direct observation a little after, the 5th wire: the corrections applied are calculated for two intervals.

(e) On turning the circle for the direct observation, a heavy substance was heard to fall, which was afterwards discovered to be the counterpoise in the tube of the telescope towards the object end.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	28.32.22,07	30,010	56,4	55,5	31,46	2,36			66.19.59,45	Mars.
38,68	23.47.26,56	30,020	57,2	57,3					61.25. 0,26	Pollux R.
	23.47.26,69				25,42				61.35. 0,39	Pollux.
	37. 4. 1,89			57,6	43,51	11,99	12,061	20,71	74.51.20,98	Venus.
	42.39.33,07	30,030	61,2	61,1	52,70	5,73		15.52,20	80.43.20,52	⊙.
	43.11.21,16				53,69	5,79			80.43.25,14	⊙.
	43.12.48,92	30,050	59,0	57,7	54,13	2,35			81. 0.48,98	Pallas.
	36.59.59,29	29,974	62,8	63,2	42,86	11,61	12,068	20,78	74.47.18,04	Venus.
	33. 7.36,84		64,0	64,4	37,03	0,76	11,778	17,76	70.55. 3,63	Jupiter.
	43.22.39,08	29,960	68,0	69,0	53,08	5,81		15.52,60	81.26.27,23	⊙.
	43.54.25,02				54,07	5,87			81.26.28,90	⊙.
	49. 5.29,82	29,946	69,6	70,6	1. 4,56	4,91			86.53.37,75	Mercury.
38,07	39.30.55,80	29,897	67,2	65,9	46,52				77.18.50,60	α Ophiuchi R.
	39.30.54,72								77.18.49,52	α Ophiuchi.
39,16	−34.22. 2,38		64,8	63,4	38,77				3.24.27,13	δ Urs. Min. R.
	−34.22. 1,28								3.24.28,23	δ Ursæ Minoris.
37,62	13.34.21,47				13,69				51.21.43,44	α Lyræ R.
	13.34.19,49								51.21.41,46	α Lyræ.
	43.36.25,47	29,874	61,0	58,8	54,43	2,36			81.24.25,82	Pallas.
39,31	−67.56.31,78	29,850	59,8	58,5	2.20,13				−30.11.43,63	ν U. Maj. SP. R.
	−67.56.30,38								−30.11.42,23	ν Urs. Maj. SP.
	63.35.40,97			58,1	1.54,72	0,40			101.24.43,57	Uranus.
39,69	−65. 7. 1,77	29,830	58,8	57,0	2. 2,91				−27.21.56,40	α U. Maj. SP. R.
	−65. 6.59,62								−27.21.54,25	α Urs. Maj. SP.
	59. 6.55,12				1.35,52				96.55.38,92	φ Aquarii.
	62.41. 7,07				1.50,50				100.30. 5,85	ψ^3 Aquarii.
	71.49. 6,77	29,820	58,4	56,1	2.52,91	4,06			109.39. 3,90	Ceres.
	28.35.18,91	29,660	59,5	60,4	30,85	2,38			66.22.55,66	Mars.
	36.57.48,12		64,0	66,2	42,10	11,43	8,183	19,71	74.45.46,78	Venus.
	43.44.23,91	29,730	65,5	67,2	53,54	5,85		15.52,90	81.48.12,78	⊙.
	44.16.10,22				54,53	5,91			81.48.14,22	⊙.
	49.50.53,19	29,756	66,4	67,9	1. 6,24	4,99			87.39. 2,72	Mercury.
38,44	19. 1.45,61	29,800	61,0	60,1	19,63				56.49.13,52	β Lyræ R.
	19. 1.45,26								56.49.13,17	β Lyræ.
37,58	−45. 4.12,71				57,00				−7.18. 1,43	A. S. C. 874. SP. R.
	−45. 4.14,78								−7.18. 3,50	A.S.C. 874. SP.
	43.48.20,81		57,3	54,1	55,19	2,36			81.36.21,92	Pallas.
38,14	13.34.20,61	29,698	53,2	51,1	13,94				51.21.42,83	α Lyræ R.
	13.34.19,66								51.21.41,88	α Lyræ.
	44. 0.18,54	29,740	51,5	50,2	55,92	2,37			81.48.20,37	Pallas.
38,29	−9.40.44,24				9,88				28. 6.14,16	α Cephei R.
	−9.40.44,88								28. 6.13,52	α Cephei.
35,60	−67.56.29,14	29,760	51,2	49,4	2.22,33				−30.11.43,19	ν U. Maj. SP. R.
	−67.56.28,06								−30.11.42,11	ν Urs. Maj. SP.
	63.37.19,69	29,785	50,4	48,1	1.56,97	0,40			101.26.24,54	Uranus.
	72. 1.20,29	29,790	49,4	46,9	2.58,13	4,07			109.51.22,63	Ceres.
	33.16.24,26	29,818	55,6	56,5	37,63	0,77	11,750	17,47	71. 3.51,93	Jupiter.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},074. One revolution = 20″,843.
Correction for Runs = −3″,2.
Adopted Zenith Point = 195°. 9′. 38″,61. From ν Ursæ Majoris SP. Sept. 2. = 195°. 9′. 35″,06.
Assumed Co-latitude = 37°. 47′. 8″,28.
The change of Zenith point on Sept. 2. probably owing to the shifting of the counterpoise.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Sept. 3	⊙ N.L. M.	239.35	4. 9,3	12,8	7,8	7,9	9,4	7,3	13,738	– 1.16,23	239.37.52,64	G.
	⊙ S.L.	240. 5	4.38,7	42,2	36,2	37,4	39,4	37,2			240. 9.38,27	G.
	β Lyræ R. M.	356. 5	3.10,4	14,4	11,5	10,8	13,2	9,8	11,127	– 21,80	356. 7.49,72	G.
	β Lyræ	214.10	1.19,8	21,2	17,0	18,0	20,8	17,2			214.11.18,93	G.
	h^2 Sagittarii	272.30	2.37,8	41,2	36,0	35,4	37,7	35,5			272.32.37,13	G.
	α Aquilæ R. M.	331.25	0. 6,2	10,3	5,2	6,3	8,8	6,5	12,738	– 55,39	331.24.11,83	G.
	(*a*) α Aquilæ	238.50	4.55,0	58,2	53,8	54,5	56,2	55,6			238.54.55,55	G.
	β Aquarii R. M.	316.40	2. 6,8	9,4	4,8	5,4	7,1	3,9	12,854	– 57,80	316.41. 8,32	G.
	β Aquarii	253.35	3. 3,3	5,5	1,4	0,7	3,3	0,9			253.38. 2,35	G.
Sept. 5	⊙ N.L. M.	240.20	4. 9,7	11,2	7,0	7,8	11,5	7,2	15,553	– 1.54,06	240.22.14,79	G.
	⊙ S.L.	240.50	4. 4,0	6,0	1,3	0,0	4,2	0,7			240.54. 2,48	G.
	Mercury center	247.55	4. 2,4	5,2	0,4	0,9	5,2	0,0			247.59. 2,13	G.
	Pallas	239.45	1. 3,0	4,7	1,5	1,7	4,4	2,9			239.46. 2,97	G.
	α Cephei R. M.	24.50	0.15,7	20,2	13,7	17,0	17,2	16,3	9,957	+ 2,58	24.50.19,25	G.
	α Cephei	185.25	3.51,4	53,7	49,3	51,0	50,9	50,0			185.28.50,85	G.
	β Aquarii R. M.	316.40	2. 8,8	11,5	6,4	8,6	9,0	7,4	13,030	– 1. 1,47	316.41. 7,03	G.
	β Aquarii	253.35	3. 2,6	4,8	1,3	0,6	3,4	0,3			253.38. 2,00	G.
	υ U. Maj. SP. R. M.	83. 5	2. 9,3	12,7	8,6	11,0	9,2	9,0	13,030	– 1. 1,47	83. 6. 8,38	G.
	υ Ursæ Majoris SP.	127.10	3. 4,0	7,8	2,8	3,8	3,3	2,4			127.13. 3,85	G.
	Uranus	258.45	4.27,9	29,8	27,2	27,0	28,8	27,4			258.49.27,78	G.
	Mars center	223.50	3. 5,8	7,4	4,6	4,2	6,2	3,0			223.53. 5,03	G.
	(*b*) ☽ S.L.	221.25	2.23,4	25,4	20,0	21,9	22,0	20,3			221.27.22,03	G.
	Venus S.L.	232. 5	0.42,2	45,5	39,2	41,8	42,0	41,8			232. 5.42,05	G.
Sept. 6	β Lyræ R. M.	356. 5	3.12,3	16,8	14,2	14,3	15,6	12,2	11,272	– 24,82	356. 7.49,23	G.
	β Lyræ	214.10	1.19,7	21,9	16,4	18,5	18,8	17,4			214.11.18,72	G.
	(*c*) Pallas	239.55	3.16,8	17,0	15,3	13,6	17,3	16,6			239.58.15,92	G.
	α Cephei R. M.	24.50	1. 7,4	13,2	7,5	9,2	8,9	7,2	12,447	– 49,32	24.50.19,51	G.
	α Cephei	185.25	3.51,8	53,8	49,0	50,7	50,8	50,8			185.28.50,95	G.
	β Aquarii R. M.	316.40	2. 9,4	11,4	7,7	7,1	8,7	7,8	12,990	– 1. 0,64	316.41. 7,93	G.
	β Aquarii	253.35	2.61,8	63,2	61,2	59,2	61,2	60,0			253.38. 0,93	G.
	υ U. Maj. SP. R. M.	83. 5	2.10,3	14,4	9,4	12,7	9,5	10,8	13,070	– 1. 2,31	83. 6. 8,76	G.
	υ Ursæ Majoris SP.	127.10	3. 3,9	7,2	2,0	3,8	3,0	3,4			127.13. 3,72	G.
	Uranus	258.50	0.16,7	18,2	15,8	15,4	15,3	17,4			258.50.16,45	G.
	Venus S.L.	232. 5	1.24,0	25,2	20,2	23,0	21,3	23,3			232. 6.22,77	G.
Sept. 7	⊙ N.L. M.	241. 5	3.16,2	17,0	14,0	12,4	15,2	12,9	13,421	– 1. 9,61	241. 7. 4,84	G.
	⊙ S.L.	241.35	3.55,0	57,4	54,2	53,6	54,8	52,9			241.38.54,45	G.
Sept. 9	α Aquilæ R. M.	331.25	0. 9,0	14,0	8,9	10,4	13,5	10,4	12,870	– 58,16	331.24.12,86	G.
	(*a*) α Aquilæ	238.50	4.55,2	59,2	53,4	55,0	58,8	56,1			238.54.56,28	G.
	Pallas	240.30	4.50,1	52,4	49,8	47,8	52,4	48,2			240.34.49,90	G.
	(*d*) α Cephei R. M.	24.45	4.39,7	45,7	39,0	40,3	42,8	39,0	7,880	+ 45,86	24.50.26,74	G.
	α Cephei	185.25	3.55,9	58,9	54,0	55,0	56,8	54,4			185.28.55,67	G.
	(*e*) β Aquarii R. M.	316.40	2.10,0	14,2	10,2	9,3	12,6	8,7	12,793	– 56,55	316.41.14,18	G.
	β Aquarii	253.35	3. 6,0	8,6	5,8	4,2	6,8	3,8			253.38. 5,73	G.
	υ U. Maj. SP. R. M.	83. 5	2. 9,8	14,4	10,8	11,4	12,4	10,3	12,814	– 56,99	83. 6.14,29	G.
	υ Ursæ Majoris SP.	127.10	3.10,2	14,4	10,0	10,4	10,7	9,8			127.13.10,78	G.
	Uranus	258.50	2.46,8	49,8	46,8	45,0	47,0	46,0			258.52.46,78	G.
	Ceres	267.50	0.33,0	35,5	32,0	31,3	33,7	33,0			267.50.33,07	G.
Sept. 10	α^1 Capricorni R. M.	309.55	4. 6,3	9,3	6,2	5,0	7,5	3,7	11,989	– 39,79	309.58.26,36	G.
	(*f*) α^1 Capricorni	260.20	0.57,3	59,8	56,0	55,4	58,0	55,7		– 0,14	260.20.56,86	G.

(*a*) No correction for runs.

(*b*) At the 2^d wire: very doubtful.

(*c*) Exceedingly doubtful.

(*d*) The counterpoise fell as before after two microscopes had been read, and was found to alter the readings only 0″,7, while the zenith point changed 6″,3. The cause of irregularity, which was supposed to be in one of the cones, appears therefore to be in the telescope.

(*e*) Very faint and doubtful.

(*f*) At the 5^th wire.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	44 . 28 . 17,58	29,782	59,5	60,2	55,79	5,93		15 . 53,30	82 . 32 . 9,02	⊙.
	45 . 0 . 3,21				56,82	5,99			82 . 32 . 9,02	⊙.
34,32	19 . 1 . 45,34	29,612	57,3	55,4	19,69				56 . 49 . 13,31	β Lyræ R.
	19 . 1 . 43,87								56 . 49 . 11,84	β Lyræ.
	77 . 23 . 2,07	29,604	56,6	54,5	4 . 9,65				115 . 14 . 20,00	h^2 Sagittarii.
33,69	43 . 45 . 23,23				54,70				81 . 33 . 26,21	α Aquilæ R.
	43 . 45 . 20,49								81 . 33 . 23,47	α Aquilæ.
35,34	58 . 28 . 26,74	29,550	55,0	53,9	1 . 32,88				96 . 17 . 7,90	β Aquarii R.
	58 . 28 . 27,29								96 . 17 . 8,45	β Aquarii.
	45 . 12 . 39,73	29,470	58,6	59,2	56,76	6,01		15 . 53,80	83 . 16 . 32,56	⊙.
	45 . 44 . 27,42				57,81	6,07			83 . 16 . 33,64	⊙.
	52 . 49 . 27,07	29,500	59,0	59,5	1 . 14,25	5,34			90 . 37 . 44,26	Mercury.
	44 . 36 . 27,91	29,426	56,2	53,2	56,15	2,38			82 . 24 . 29,96	Pallas.
35,14	− 9 . 40 . 44,19	29,420	55,0	52,6	9,73				28 . 6 . 14,36	α Cephei R.
	− 9 . 40 . 44,21								28 . 6 . 14,34	α Cephei.
34,52	58 . 28 . 28,03				1 . 32,71				96 . 17 . 9,02	β Aquarii R.
	58 . 28 . 26,94								96 . 17 . 7,93	β Aquarii.
36,12	− 67 . 56 . 33,32				2 . 19,79				− 30 . 11 . 44,83	υ U. Maj. SP. R.
	− 67 . 56 . 31,21								− 30 . 11 . 42,72	υ Urs. Maj. SP.
	63 . 39 . 52,72	29,388	54,4		1 . 54,59	0,40			101 . 28 . 55,19	Uranus.
	28 . 43 . 29,97	29,242	55,2	53,6	31,01	2,43			66 . 31 . 6,83	Mars.
	26 . 17 . 46,97			54,8	27,89	23 . 51,40		14 . 47,90	63 . 26 . 43,84	☽.
	36 . 56 . 6,99	29,224	56,0	56,0	42,29	10,60	11,877	18,78	74 . 43 . 28,18	Venus.
33,98	19 . 1 . 45,83	29,282	56,4	55,8	19,46				56 . 49 . 13,57	β Lyræ R.
	19 . 1 . 43,66								56 . 49 . 11,40	β Lyræ.
	44 . 48 . 40,86	29,340	53,2	49,0	56,86	2,38			82 . 36 . 43,62	Pallas.
35,23	− 9 . 40 . 44,45	29,348	51,6		9,78				28 . 6 . 14,05	α Cephei R.
	− 9 . 40 . 44,11								28 . 6 . 14,39	α Cephei.
34,43	58 . 28 . 27,13				1 . 33,17				96 . 17 . 8,58	β Aquarii R.
	58 . 28 . 25,87								96 . 17 . 7,32	β Aquarii.
36,24	− 67 . 56 . 33,70				2 . 20,46				− 30 . 11 . 45,88	υ U. Maj. SP. R.
	− 67 . 56 . 31,34								− 30 . 11 . 43,52	υ Urs. Maj. SP.
	63 . 40 . 41,39	29,358	50,8	48,6	1 . 55,47	0,40			101 . 29 . 44,74	Uranus.
	36 . 56 . 47,71	29,538	53,8	53,3	42,99	10,45	11,832	18,31	74 . 44 . 10,22	Venus.
	45 . 57 . 29,78	29,576	57,4	57,8	58,62	6,09		15 . 54,30	84 . 1 . 24,89	⊙.
	46 . 29 . 19,39				59,71	6,15			84 . 1 . 26,93	⊙.
34,57	43 . 45 . 22,20	29,750	55,3	53,2	55,11				81 . 33 . 25,59	α Aquilæ R.
	43 . 45 . 21,22								81 . 33 . 24,61	α Aquilæ.
	45 . 25 . 14,84	29,760	53,7	51,4	58,63	2,39			83 . 13 . 19,36	Pallas.
41,21	− 9 . 40 . 45,38		52,4	49,2	9,91				28 . 6 . 12,99	α Cephei R.
	− 9 . 40 . 45,69								28 . 6 . 12,68	α Cephei.
39,96	58 . 28 . 27,18				1 . 34,42				96 . 17 . 9,88	β Aquarii R.
	58 . 28 . 24,37								96 . 17 . 7,07	β Aquarii.
42,54	− 67 . 56 . 32,93				2 . 22,37				− 30 . 11 . 47,02	υ U. Maj. SP. R.
	− 67 . 56 . 30,58								− 30 . 11 . 44,67	υ Urs. Maj. SP.
	63 . 43 . 5,42	29,750	50,4	48,4	1 . 57,25	0,40			101 . 32 . 10,55	Uranus.
	72 . 40 . 51,71	29,736	48,8	46,5	3 . 5,00	4,09			110 . 31 . 0,90	Ceres.
41,61	65 . 11 . 15,00	29,774	50,6	48,7	2 . 5,19				103 . 0 . 28,47	$α^1$ Capricorni R.
	65 . 11 . 15,50								103 . 0 . 28,97	$α^1$ Capricorni.

Coincidence of Micrometer Wire with fixed Wire = 10ʳ,074. From Sept. 3. = 10ʳ,081. From Sept. 9. = 10ʳ,080. One revolution = 20″.843.
Correction for Runs = − 3″,2. From Sept 3. = − 1″,6. From Sept. 9. = − 1″,3.
Adopted Zenith Point = 195° . 9′ . 35″,06. From α Cephei Sept. 9. = 195° . 9′ . 41″,36.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Runs and coincidence of wires taken Sept. 4. 22ʰ, and Sept. 11. 22ʰ.
The change of Zenith point on Sept. 9. appears certainly to be owing to the shifting of the counterpoise. The same cause probably produced the changes on former occasions that were not accounted for.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Sept. 10	α² Capricorni R. M.	309 . 55	4 . 6,3	9,3	6,2	5,0	7,5	3,7	18,587	−2 . 57,31	309 . 56 . 8,84	G.
	(a) α² Capricorni M....	260 . 20	0 . 57,3	59,8	56,0	55,4	58,0	55,7	3,538	+2 . 16,35 −0,14	260 . 23 . 13,21	G.
	α Cephei R. M......	24 . 50	0 . 9,7	14,8	10,5	9,7	11,8	9,1	9,264	+18,88	24 . 50 . 29,81	G.
	α Cephei	185 . 25	3 . 55,3	59,4	55,4	55,8	56,9	54,8			185 . 28 . 56,10	G.
	Uranus	258 . 50	3 . 35,8	37,5	35,4	32,8	35,3	34,7			258 . 53 . 35,10	G.
	Ceres.................	267 . 55	0 . 40,6	43,0	39,6	39,0	40,3	39,7			267 . 55 . 40,33	G.
Sept. 12	(b) Mars center.........	224 . 10	0 . 59,9	63,2	58,0	58,9	60,9	58,5			224 . 10 . 59,85	G.
	(c) Pollux R. M.	351 . 20	2 . 52,5	57,5	53,8	53,5	56,2	52,2	11,980	−39,60 −0,32	351 . 22 . 14,23	G.
	Pollux................	218 . 55	2 . 7,0	10,2	5,3	5,7	8,8	6,6		+0,32	218 . 57 . 7,50	G.
	Venus S.L..........	232 . 15	4 . 32,1	36,3	30,2	32,0	34,8	31,2			232 . 19 . 32,57	G.
Sept. 13	⊙ N.L. M..........	243 . 25	0 . 8,4	12,0	6,8	8,0	9,4	8,4	13,710	−1 . 15,67	243 . 23 . 53,16	G.
	⊙ S.L................	243 . 55	0 . 43,9	48,4	41,4	43,8	44,8	42,8			243 . 55 . 44,15	G.
	γ Aquilæ R. M.	333 . 10	1 . 11,0	14,7	11,3	11,2	15,3	11,8	10,746	−13,89	333 . 10 . 58,61	G.
	γ Aquilæ...........	237 . 5	3 . 24,0	26,6	21,3	22,3	25,8	25,3			237 . 8 . 24,07	G.
	α Aquilæ R. M.....	331 . 20	4 . 11,8	15,2	10,2	11,8	13,4	11,6	9,742	+7,05	331 . 24 . 19,20	G.
	α Aquilæ	238 . 50	5 . 2,2	5,0	0,8	0,4	4,1	2,4			238 . 55 . 2,27	G.
	β Aquilæ R. M.....	328 . 55	3 . 10,0	13,3	8,8	8,9	10,1	9,5	10,254	−3,62	328 . 58 . 6,35	G.
	β Aquilæ............	241 . 20	1 . 16,2	17,8	13,0	13,3	16,5	16,3			241 . 21 . 15,47	G.
	Pallas.................	241 . 20	3 . 59,5	60,6	57,0	55,9	58,7	57,7			241 . 23 . 58,07	G.
	α Cephei R. M......	24 . 50	4 . 12,2	17,1	12,0	12,2	14,1	12,0	20,860	−3 . 44,69	24 . 50 . 28,39	G.
	α Cephei	185 . 25	3 . 55,8	58,6	53,9	55,7	55,2	56,0			185 . 28 . 55,70	G.
	Uranus	258 . 55	0 . 57,5	60,3	57,0	55,6	57,4	57,7			258 . 55 . 57,55	G.
	(d) Ceres.................	268 . 5	4 . 53,8	57,3	53,5	54,0	55,4	53,3			268 . 9 . 54,55	G.
Sept. 14	(a) α Aquilæ R. M.	331 . 25	0 . 13,6	17,1	12,2	12,1	14,5	14,2	12,675	−54,09 −0,09	331 . 24 . 19,77	G.
	(e) α Aquilæ............	238 . 50	4 . 60,0	62,5	58,0	58,8	61,2	61,4		+0,20	238 . 55 . 0,52	G.
	β Cephei R. M......	32 . 45	3 . 8,4	13,4	6,7	8,5	8,0	9,0	12,665	−53,88	32 . 47 . 14,99	G.
	β Cephei............	177 . 30	2 . 5,0	10,2	5,8	6,3	7,4	5,4			177 . 32 . 6,60	G.
	Uranus	258 . 55	1 . 44,9	47,0	42,8	42,2	44,2	44,3			258 . 56 . 44,17	G.
	α Pegasi R. M......	337 . 15	2 . 12,0	16,8	12,7	11,2	15,2	12,8	9,846	+4,88	337 . 17 . 18,23	G.
	α Pegasi	233 . 0	2 . 3,0	5,2	1,8	1,0	4,8	2,8			233 . 2 . 3,02	G.
	Ceres.................	268 . 10	4 . 33,7	37,8	33,3	33,5	35,2	33,2			268 . 14 . 34,25	G.
	(f) Venus S.L..........	232 . 25	2 . 27,3	30,7	24,8	26,5	29,3	27,7			232 . 27 . 27,62	G.
Sept. 19	(g) Jupiter N.L.........	268 . 20	3 . 0,9	5,8	2,8	6,3	4,6	2,6			268 . 23 . 3,92	G.
	Venus S.L..........	272 . 0	3 . 51,5	53,0	51,2	52,0	53,6	51,0			272 . 3 . 52,15	G.
Sept. 20	(h) ⊙ S.L. M...........	285 . 45	3 . 13,1	15,8	11,4	16,2	16,0	15,0	14,664	−1 . 35,42	285 . 46 . 39,25	G.
	⊙ N.L................	285 . 10	4 . 41,8	44,6	41,0	45,0	44,8	43,4			285 . 14 . 43,57	G.
	Ceres.................	307 . 45	0 . 57,8	55,3	54,8	56,8	55,4	59,5			307 . 45 . 56,62	G.
	α Andromedæ R. M.	30 . 15	1 . 30,7	27,0	25,8	28,4	27,2	31,8	8,354	+36,10	30 . 17 . 4,62	G.
	α Andromedæ.......	258 . 15	4 . 9,8	5,0	5,7	8,0	7,0	9,4			258 . 19 . 7,60	G.
Sept. 21	⊙ N.L. M.	285 . 35	4 . 20,5	18,0	19,0	19,7	20,2	19,2	13,644	−1 . 14,16	285 . 38 . 5,39	G.
	⊙ S.L.	286 . 5	4 . 60,5	58,3	58,5	59,0	59,7	58,0			286 . 9 . 59,13	G.

(a) At the 5th wire. (b) Shutters just opened.
(c) At 1st and 5th wires. (d) No correction for runs.
(e) At the comb: not very good. No correction for runs. (f) Very cloudy.
(g) Before this observation the circle was taken from the wall and its axis cleaned, the position of the telescope on the circle was changed, and the microscopes were adjusted. A leaden weight attached externally to the eye-end of the telescope was taken off and not replaced. From this date to Dec. 12. a correction is applied to stars observed out of the meridian, for the position of the wire frame, as explained in the Introduction.
(h) Very steady: satisfactory observation.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
41,03	65 . 13 . 32,52	29,774	50,6	48,7	2 . 5,41				103 . 2 . 46,21	α^2 Capricorni R.
	65 . 13 . 31,85								103 . 2 . 45,54	α^2 Capricorni.
42,95	− 9 . 40 . 48,45		49,4	47,9	9,94				28 . 6 . 9,89	α Cephei R.
	− 9 . 40 . 45,26								28 . 6 . 13,08	α Cephei.
	63 . 43 . 53,74	29,790	48,4	46,4	1 . 57,96	0,40			101 . 32 . 59,58	Uranus.
	72 . 45 . 58,97	29,800	47,4	45,8	3 . 6,65	4,09			110 . 36 . 9,81	Ceres.
	29 . 1 . 18,49	29,970	53,0	52,5	32,24	2,52			66 . 48 . 56,49	Mars.
40,87	23 . 47 . 27,13			53,0	25,60				61 . 35 . 1,01	Pollux R.
	23 . 47 . 26,14								61 . 35 . 0,02	Pollux.
	37 . 9 . 51,21		53,7	53,7	43,94	9,63	11,752	17,55	74 . 57 . 16,25	Venus.
	48 . 14 . 11,80	29,976	55,4	56,0	1 . 4,55	6,33		15 . 55,80	86 . 18 . 14,10	☉.
	48 . 46 . 2,79				1 . 5,78	6,39			86 . 18 . 14,66	☉.
41,34	41 . 58 . 42,75	30,038	53,2	52,2	52,40				79 . 46 . 43,43	γ Aquilæ R.
	41 . 58 . 42,71								79 . 46 . 43,39	γ Aquilæ.
40,74	43 . 45 . 22,16				55,76				81 . 33 . 26,20	α Aquilæ R.
	43 . 45 . 20,91								81 . 33 . 26,95	α Aquilæ.
40,91	46 . 11 . 35,01				1 . 0,70				83 . 59 . 43,99	β Aquilæ R.
	46 . 11 . 34,11								83 . 59 . 43,09	β Aquilæ.
	46 . 14 . 16,71		52,0	50,8	1 . 0,96	2,40			84 . 2 . 23,55	Pallas.
42,05	− 9 . 40 . 47,03				9,97				28 . 6 . 11,28	α Cephei R.
	− 9 . 40 . 45,66								28 . 6 . 12,65	α Cephei.
	63 . 46 . 16,19	30,050	51,8	50,5	1 . 58,20	0,40			101 . 35 . 22,27	Uranus.
	73 . 0 . 13,19		51,4	50,1	3 . 9,23	4,09			110 . 50 . 26,61	Ceres.
40,15	43 . 45 . 21,59	30,050	52,7	50,8	55,93				81 . 33 . 25,80	α Aquilæ R.
	43 . 45 . 19,16								81 . 33 . 23,37	α Aquilæ.
40,80	− 17 . 37 . 33,63			50,5	18,59				20 . 9 . 16,06	β Cephei R.
	− 17 . 37 . 34,76								20 . 9 . 14,93	β Cephei.
	63 . 47 . 2,81	30,060	51,5		1 . 58,31	0,40			101 . 36 . 9,00	Uranus.
40,63	37 . 52 . 23,13		51,0	49,4	54,60				75 . 40 . 17,01	α Pegasi R.
	37 . 52 . 21,66								75 . 40 . 15,54	α Pegasi.
	73 . 4 . 52,89				3 . 10,46	4,09			110 . 55 . 7,54	Ceres.
	37 . 17 . 46,26	30,086	52,7	54,0	44,29	9,41	11,594	15,91	75 . 5 . 13,51	Venus.
	34 . 4 . 56,55	29,876	51,7	51,5	39,27	0,81	8,435	17,21	71 . 53 . 0,50	Jupiter.
	37 . 45 . 44,78				44,95	8,91	11,537	15,31	75 . 33 . 13,79	Venus.
	51 . 28 . 31,88	29,862	54,7	56,2	1 . 12,09	6,66		15 . 57,70	89 . 0 . 47,89	☉.
	50 . 56 . 36,20				1 . 10,74	6,61			89 . 0 . 46,31	☉.
	73 . 27 . 49,25	29,962	49,0	45,7	3 . 15,87	4,06			111 . 18 . 9,34	Ceres.
6,11	24 . 1 . 2,75		48,4	45,4	26,27				61 . 48 . 37,30	α Andromedæ R.
	24 . 1 . 0,23								61 . 48 . 34,78	α Andromedæ.
	51 . 19 . 58,02	30,066	49,0	49,8	1 . 13,15	6,65		15 . 58,00	89 . 24 . 10,80	☉.
	51 . 51 . 51,76				1 . 14,56	6,70			89 . 24 . 9,90	☉.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},080. From Sept. 19. = 10^{r},086. One revolution = 20″,843.
Correction for Runs = − 1″,3. From Sept. 19. = + 0″,8.
Adopted Zenith Point = 195°. 9′. 41″,36. From Sept. 19. = 234°. 18′. 7″,37.
Assumed Co-latitude = 37°. 47′. 8″,28.
Runs and coincidence of wires taken Sept. 20. 23^{h}.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Sept. 21	(a) ☽ S.L.	307 . 50	3 . 23,0	19,0	21,0	22,2	21,0	23,2		– 8,74	307 . 53 . 12,91	G.
	☽ S.L. M.	307 . 50	3 . 23,0	19,0	21,0	22,2	21,0	23,2	10,334	– 5,17 – 4,37	307 . 53 . 12,11	G.
	☽ S.L. M.	307 . 50	3 . 23,0	19,0	21,0	22,2	21,0	23,2	10,668	– 12,13	307 . 53 . 9,52	G.
	☽ S.L. M.	307 . 50	3 . 23,0	19,0	21,0	22,2	21,0	23,2	10,804	– 16,84 + 4,37	307 . 53 . 9,18	G.
	☽ S.L. M.	307 . 50	3 . 23,0	19,0	21,0	22,2	21,0	23,2	10,990	– 18,84 + 8,74	307 . 53 . 11,55	G.
Sept. 23	γ Aquilæ R. M.	12 . 15	4 . 36,6	32,3	33,1	35,9	36,8	37,9	10,567	– 10,03	12 . 19 . 24,62	C.
	γ Aquilæ	276 . 15	1 . 51,0	46,4	46,8	48,2	48,8	48,0			276 . 16 . 47,90	C.
	(b) Pallas	282 . 30	3 . 19,7	17,8	16,7	19,5	19,8	21,3			282 . 33 . 18,57	G.
	α Cephei R. M.	63 . 55	4 . 11,8	10,3	8,8	12,4	11,7	14,4	10,700	– 12,80	63 . 58 . 58,05	G.
	α Cephei	224 . 35	2 . 19,5	15,5	14,4	17,5	18,7	20,5			224 . 37 . 17,30	G.
	β Aquarii R. M.	355 . 45	4 . 9,5	9,0	7,8	10,5	11,8	12,7	8,600	+ 30,98	355 . 49 . 40,48	G.
	β Aquarii	292 . 45	1 . 35,0	33,8	31,0	35,3	33,4	37,0			292 . 46 . 33,98	G.
	υ U. Maj. SP. R. M.	122 . 15	2 . 12,0	8,2	7,4	12,1	7,8	14,8	17,005	– 2 . 24,22	122 . 14 . 45,80	G.
	υ Ursæ Majoris SP.	166 . 20	1 . 30,0	27,3	27,0	30,0	30,5	32,8			166 . 21 . 29,35	G.
	Uranus	298 . 10	1 . 48,1	44,4	43,6	47,1	45,4	49,2			298 . 11 . 46,00	C.
	α U. Maj. SP. R. M.	119 . 25	3 . 56,4	54,9	52,7	56,0	55,0	58,0	20,555	– 3 . 38,21	119 . 25 . 16,62	C.
	(c) α Ursæ Majoris SP.	169 . 10	0 . 61,2	57,0	57,8	61,2	59,6	64,0		– 2,80	169 . 10 . 57,17	C.
	φ Aquarii R. M.	355 . 10	0 . 12,5	11,5	11,4	13,7	13,5	16,0	7,241	+ 59,29	355 . 11 . 12,36	G.
	(d) φ Aquarii	293 . 20	4 . 60,4	59,7	58,4	61,4	59,6	62,4			293 . 25 . 0,32	G.
	(e) ☽ S.L.	296 . 15	3 . 46,1	44,4	42,3	45,8	44,8	46,6		– 10,48	296 . 18 . 33,89	G.
	☽ S.L. M.	296 . 15	3 . 46,1	44,4	42,3	45,8	44,8	46,6	10,307	– 4,61 – 5,24	296 . 18 . 34,52	G.
	☽ S.L. M.	296 . 15	3 . 46,1	44,4	42,3	45,8	44,8	46,6	10,564	– 9,97	296 . 18 . 34,40	G.
	☽ S.L. M.	296 . 15	3 . 46,1	44,4	42,3	45,8	44,8	46,6	10,860	– 16,13 + 5,24	296 . 18 . 33,48	G.
	☽ S.L. M.	296 . 15	3 . 46,1	44,4	42,3	45,8	44,8	46,6	11,077	– 20,66 + 10,48	296 . 18 . 34,19	G.
	p Piscium	290 . 55	2 . 12,0	10,6	9,4	12,3	10,7	13,4			290 . 57 . 11,03	G.
	s Piscium	293 . 5	1 . 36,4	34,8	32,0	35,8	35,3	37,8			293 . 6 . 35,08	G.
	(f) Polaris R. M.	90 . 30	2 . 42,1	38,0	36,7	40,2	39,5	42,7	15,518 1 . 3 . 30	– 1 . 53,23 – 0,10	90 . 30 . 46,07	C.
	Polaris	198 . 5	0 . 29,0	23,7	23,8	28,0	28,7	31,8	1 . 7 . 18	+ 1,34	198 . 5 . 28,76	C.
	Mars center	264 . 0	0 . 45,6	42,7	41,9	46,2	43,6	48,4			264 . 0 . 44,62	G.
	Jupiter N.L.	268 . 30	4 . 16,1	13,3	13,8	15,8	16,5	16,7			268 . 34 . 14,65	G.
	Venus S.L.	272 . 30	4 . 53,3	52,8	51,3	54,3	53,7	53,8			272 . 34 . 52,37	G.
Sept. 24	⊙ S.L. M.	287 . 20	0 . 15,0	15,0	12,0	18,0	16,5	19,5	10,306	– 4,59	287 . 20 . 11,36	G.
	⊙ N.L.	286 . 45	3 . 13,0	13,8	11,0	16,2	15,0	15,5			286 . 48 . 13,53	G.
	(g) Polaris SP. R. M.	93 . 35	3 . 22,7	18,2	17,5	22,7	19,0	22,8	10,150	– 1,33	93 . 38 . 18,59	G.
	Polaris SP.	194 . 55	2 . 59,4	56,2	56,0	57,2	58,8	59,2			194 . 57 . 57,30	G.
	(h) Mercury center	299 . 10	4 . 11,3	11,0	8,0	11,5	12,0	12,2			299 . 14 . 10,28	G.
	α Lyræ R. M.	40 . 40	3 . 13,2	14,0	10,6	15,8	14,4	18,2	8,400	+ 35,15	40 . 43 . 48,95	G.
	(i) α Lyræ	247 . 50	1 . 48,2	46,8	44,4	48,3	47,8	50,3	8,400	+ 35,15	247 . 52 . 22,48	G.
	Pallas	282 . 45	0 . 8,8	7,6	6,5	11,5	8,9	12,8			282 . 45 . 9,33	G.
	α Cephei R. M.	64 . 0	0 . 13,5	12,4	10,7	16,7	13,5	17,7	13,771	– 1 . 16,81	63 . 58 . 57,24	G.
	α Cephei	224 . 35	2 . 17,2	14,8	13,4	18,0	18,5	19,8			224 . 37 . 16,57	G.
	υ U. Maj. SP. R. M.	122 . 15	1 . 7,5	7,3	4,4	12,2	7,4	11,6	14,142	– 1 . 24,54	122 . 14 . 43,68	G.
	υ Ursæ Majoris SP.	166 . 20	1 . 27,0	27,0	25,3	30,0	29,3	31,6			166 . 21 . 28,12	G.
	Uranus	298 . 10	2 . 27,7	26,0	23,4	30,2	27,2	32,3			298 . 12 . 27,38	G.
	φ Aquarii	293 . 25	0 . 0,8	0,8	0,0	4,3	0,8	5,8			293 . 25 . 2,08	G.

(a) At the five wires: waving and very unsteady.
(b) So faint it would not bear the least light.
(c) At the 5th wire.
(d) No correction for runs.
(e) At the five wires: not very steady.
(f) The night was very favourable for reflection observations.
(g) Dancing very much.
(h) Extremely faint.
(i) Taken on the micrometer wire.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	73 . 35 . 5,54	30,118	48,2	46,4					110 . 12 . 42,77	☽.
	73 . 35 . 4,74								110 . 12 . 41,97	☽.
	73 . 35 . 2,15				3 . 18,11	56 . 40,51		16 . 8,65	110 . 12 . 39,38	☽.
	73 . 35 . 1,81								110 . 12 . 39,04	☽.
	73 . 35 . 4,18								110 . 12 . 41,41	☽.
6,26	41 . 58 . 42,75	29,846	58,5	59,6	51,31				79 . 46 . 42,34	γ Aquilæ R.
	41 . 58 . 40,53								79 . 46 . 40,12	γ Aquilæ.
	48 . 15 . 11,20	29,868	58,8	58,8	1 . 4,00	2,41			86 . 3 . 21,07	Pallas.
7,68	- 9 . 40 . 50,68				9,76				28 . 6 . 7,84	α Cephei R.
	- 9 . 40 . 50,07								28 . 6 . 8,45	α Cephei.
7,23	58 . 28 . 26,89				1 . 32,96				96 . 17 . 8,13	β Aquarii R.
	58 . 28 . 26,61								96 . 17 . 7,85	β Aquarii.
7,58	- 67 . 56 . 38,43	29,882	58,0	58,1	2 . 20,43				- 30 . 11 . 50,58	υ U. Maj. SP. R.
	- 67 . 56 . 38,02								- 30 . 11 . 50,17	υ Urs. Maj. SP.
	63 . 53 . 38,63	29,898	57,3	57,2	1 . 56,64	0,40			101 . 42 . 43,15	Uranus.
6,90	- 65 . 7 . 9,25	29,916	56,9	56,7	2 . 3,37				- 27 . 22 . 4,34	α U. Maj. SP. R.
	- 65 . 7 . 10,20								- 27 . 22 . 5,29	α Urs. Maj. SP.
6,34	59 . 6 . 55,01				1 . 35,87				96 . 55 . 39,16	φ Aquarii R.
	59 . 6 . 52,95								96 . 55 . 37,10	φ Aquarii.
	62 . 0 . 26,52								98 . 41 . 55,09	☽.
	62 . 0 . 27,15								98 . 41 . 55,72	☽.
	62 . 0 . 27,03				1 . 47,78	51 . 30,41		15 . 57,08	98 . 41 . 55,60	☽.
	62 . 0 . 26,11								98 . 41 . 54,68	☽.
	62 . 0 . 26,82								98 . 41 . 55,39	☽.
	56 . 39 . 3,66	29,920	56,6	56,1	1 . 27,31				94 . 27 . 39,25	*p* Piscium.
	58 . 48 . 27,71				1 . 34,85				96 . 37 . 10,84	*s* Piscium.
7,42	- 36 . 12 . 38,70	29,940	56,0		42,19				1 . 33 . 47,39	Polaris R.
	- 36 . 12 . 38,61								1 . 33 . 47,48	Polaris.
	29 . 42 . 37,25	30,000	55,4	55,5	33,00	2,69			67 . 30 . 15,84	Mars.
	34 . 16 . 7,28	30,028	56,7	57,7	39,25	0,82	8,570	15,80	72 . 4 . 9,79	Jupiter.
	38 . 16 . 45,00				45,46	8,58	11,490	14,86	76 . 4 . 15,30	Venus.
	53 . 2 . 3,99	30,040	61,6	63,4	1 . 15,59	6,81		15 . 58,80	90 . 34 . 22,25	☉.
	52 . 30 . 6,16				1 . 14,16	6,76			90 . 34 . 20,64	☉.
7,95	- 39 . 20 . 11,22	30,030	62,5	63,4	46,67				- 1 . 33 . 49,61	Polaris SP. R.
	- 39 . 20 . 10,07								- 1 . 33 . 48,46	Polaris SP.
	64 . 56 . 2,91	30,000	63,4	64,4	2 . 0,81	7,46			102 . 45 . 4,54	Mercury.
5,72	13 . 34 . 18,42	29,944	63,6	63,3	13,72				51 . 21 . 40,42	α Lyræ R.
	13 . 34 . 15,11								51 . 21 . 37,11	α Lyræ.
	48 . 27 . 1,96	29,962	60,7	60,1	1 . 4,48	2,41			86 . 15 . 12,31	Pallas.
6,90	- 9 . 40 . 49,87		60,2	59,7	9,77				28 . 6 . 8,64	α Cephei R.
	- 9 . 40 . 50,80								28 . 6 . 7,71	α Cephei.
5,90	- 67 . 56 . 36,31				2 . 20,33				- 30 . 11 . 48,36	υ U. Maj. SP. R.
	- 67 . 56 . 39,25								- 30 . 11 . 51,30	υ Urs. Maj. SP.
	63 . 54 . 20,01	29,980	59,7	59,0	1 . 56,60	0,40			101 . 43 . 24,49	Uranus.
	59 . 6 . 54,71	30,000	59,4	58,5	1 . 35,79				96 . 55 . 38,78	φ Aquarii.

Coincidence of Micrometer Wire with fixed Wire = 10ʳ,086. One revolution = 20″,843.
Correction for Runs = + 0″,8. From Sept. 23. = - 5″,1.
Adopted Zenith Point = 234° . 18′ . 7″,37.
Assumed Co-latitude = 37° . 47′ . 8″,28.
The runs were taken twice Sept. 24. 1ʰ.
Sept. 23. 13½ʰ. Molyneux fast on Hardy 1ᵐ . 3ˢ.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Sept. 24	(a) ☽ S.L.	289.45	1.15,7	13,8	13,2	18,2	13,8	19,0		−10,58	289.46. 4,82	G.
	☽ S.L. M...........	289.45	1.15,7	13,8	13,2	18,2	13,8	19,0	10,328	−5,04 −5,29	289.46. 5,07	G.
	☽ S.L. M.	289.45	1.15,7	13,8	13,2	18,2	13,8	19,0	10,590	−10,50	289.46. 4,90	G.
	☽ S.L. M...........	289.45	1.15,7	13,8	13,2	18,2	13,8	19,0	10,900	−16,96 +5,29	289.46. 3,73	G.
	☽ S.L. M...........	289.45	1.15,7	13,8	13,2	18,2	13,8	19,0	11,150	−22,17 +10,58	289.46. 3,81	G.
	δ Piscium...........	279.45	3.13,2	11,2	12,2	16,0	12,8	16,6			279.48.13,12	G.
	m Ceti	288.30	1.28,6	26,5	25,0	31,3	29,2	32,3			288.31.28,57	G.
Sept. 26	(b) ⊙ S.L. M..........	288. 5	2.14,6	11,8	12,0	16,5	16,4	16,5	10,842	−15,76 +1,13	288. 6.59,69	G.
	(c) δ Urs. Min. R. M..	88.40	1.16,1	11,2	11,7	16,8	11,8	19,6	12,996 18.30.57	−1. 0,66 −2,20	88.40.11,49	C.
	δ Ursæ Minoris.....	199.55	0.58,5	54,4	54,9	57,4	55,3	60,0	18.32.25	+6,37	199.56. 2,99	C.
	α Pegasi R. M......	16.25	1.32,9	32,2	27,6	33,8	31,0	36,3	12,297	−46,09	16.25.45,99	C.
	(d) α Pegasi.............	272.10	0.27,3	26,3	23,3	28,2	26,0	29,7		+2,79	272.10.29,52	C.
	☽ N.L.	276.30	2.42,5	41,2	38,2	43,2	41,0	43,4			276.32.41,20	G.
Sept. 27	Pollux R. M.	30.25	4.20,1	17,0	16,2	22,0	16,3	21,8	6,280	+1.19,33	30.30.37,63	G.
	(e) Pollux	258. 5	0.34,9	30,2	31,7	34,6	31,2	36,5		+1,96	258. 5.35,08	G.
	Mars center.........	264.15	4.14,8	9,7	12,0	13,5	13,2	15,0			264.19.12,45	G.
	Jupiter N.L.........	268.45	0. 9,5	6,8	8,8	11,3	5,2	11,8			268.45. 8,87	G.
	Venus S.L..........	273.10	3.41,2	38,7	38,0	41,3	38,7	40,2			273.13.39,17	G.
Sept. 28	⊙ S.L. M.	288.50	3.13,2	11,4	11,5	14,5	11,0	13,7	8,338	+36,43	288.53.48,53	G.
	⊙ N.L...............	288.20	1.47,9	47,0	45,4	50,6	45,3	49,1			288.21.47,30	G.
	Polaris SP. R. M..	93.35	4.10,7	7,8	8,6	12,8	9,2	10,0	12,663	−53,72	93.38.15,55	G.
	Polaris SP..........	194.55	2.60,0	58,0	58,8	61,2	57,4	60,7			194.57.58,93	G.
	(f) α Lyræ R. M........	40.45	0.55,0	51,5	49,7	55,9	47,9	55,8	16,022	−2. 3,74	40.43.48,76	C.
	α Lyræ........... ..	247.50	2.22,6	17,7	17,9	21,8	18,0	22,9		+5,19	247.52.25,02	C.
	Uranus	298.15	0. 6,7	3,7	4,2	6,8	1,5	7,2			298.15. 5,00	G.
	(g) α U.Maj. SP. R. M.	119.25	2.12,5	10,3	10,4	14,4	9,8	13,4	15,528	−1.53,43	119.25.18,05	G.
	α Ursæ Majoris SP.	169.10	0.59,0	55,7	56,8	58,3	55,0	59,8			169.10.57,30	G.
	Ceres..................	308. 5	1.13,3	9,8	11,5	13,5	10,3	13,7			308. 6.11,85	G.
	α Andromedæ R.M.	30.15	1.18,0	15,2	14,8	17,8	13,7	20,1	7,680	+50,16	30.17. 6,58	G.
	α Andromedæ	258.15	4. 9,8	6,4	8,0	9,4	5,7	10,8			258.19. 7,77	G.
Sept. 29	(h) Venus S.L.	273.35	0.58,2	55,2	56,5	58,6	53,7	57,9			273.35.56,55	G.
Sept. 30	(i) α Cephei R. M.	63.55	4.22,8	19,4	20,9	22,2	20,6	23,2	11,022	−19,52	63.59. 1,43	G.
	α Cephei	224.35	2.19,4	15,2	15,7	18,0	12,0	19,6			224.37.16,35	G.
	(i) υ U. Maj. SP. R. M.	122.15	0.18,0	15,8	15,8	19,0	9,4	19,7	11,610	−31,76	122.14.44,49	G.
	υ Urs. Maj. SP.	166.20	1.33,3	30,8	30,8	33,8	28,8	34,7			166.21.31,83	G.
	α Aquarii R. M. ...	0.55	4.14,2	12,0	13,3	15,0	12,5	14,7	7,855	+46,51	0.59.59,58	G.
	α Aquarii...........	287.35	1.17,3	13,3	14,0	18,3	8,8	17,5			287.36.14,70	G.
	Uranus	298.15	1.19,8	15,5	18,3	19,7	13,6	18,9			298.16.17,47	G.
	Ceres	308. 5	4. 8,0	4,0	7,0	7,8	3,8	6,4			308. 9. 5,63	G.
Oct. 1	α Cephei R. M......	63.55	4.18,4	18,0	18,0	20,2	18,7	20,0	10,954	−18,09	63.59. 0,23	G.
	α Cephei	224.35	2.18,8	15,2	16,0	19,0	13,0	19,3			224.37.16,58	G.
	υ U. Maj. SP. R. M.	122.15	0.12,0	10,0	9,8	14,1	6,0	14,3	11,233	−23,90	122.14.47,10	G.
	υ Ursæ Majoris SP.	166.20	1.26,3	24,5	25,2	28,2	24,2	28,8			166.21.26,02	G.
	Uranus	298.15	1.55,1	53,5	54,3	56,4	52,3	56,0			298.16.54,35	G.

(a) At the five wires.
(b) At the 5th wire: very faint and misty.
(c) Correction for position of wire-frame is + 1″,02 for the reflection observation, and + 1″,23 for the direct observation, calculated respectively for 1¼ and 1½ intervals.
(d) At the comb.
(e) At the 5th wire.
(f) Not good, the mercury being disturbed by the wind. The direct observation was taken at the distance of four intervals from the middle wire.
(g) Not very good.
(h) Cloudy.
(i) Too much wind.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	55 . 27 . 57,45	30,010	58,4	57,7					92 . 13 . 6,80	☽.
	55 . 27 . 57,70								92 . 13 . 7,05	☽.
	55 . 27 . 57,53				1 . 23,49	47 . 34,40		15 . 48,02	92 . 13 . 6,88	☽.
	55 . 27 . 56,36								92 . 13 . 5,71	☽.
	55 . 27 . 56,44								92 . 13 . 5,79	☽.
	45 . 30 . 5,75				58,54				83 . 18 . 12,57	δ Piscium.
	54 . 13 . 21,20				1 . 19,74				92 . 1 . 49,22	*m* Ceti.
	53 . 48 . 52,32	30,008	61,7	62,9	1 . 17,76	6,88		15 . 59,30	91 . 21 . 12,18	☉.
7,24	− 34 . 22 . 4,12	29,884	63,8	63,4	38,76				3 . 24 . 25,40	δ Urs. Min. R.
	− 34 . 22 . 4,38								3 . 24 . 25,14	δ Ursæ Minoris.
7,66	37 . 52 . 21,38	29,836	62,0	62,1	44,12				75 . 40 . 13,78	α Pegasi R.
	37 . 52 . 22,15								75 . 40 . 14,55	α Pegasi.
	42 . 14 . 33,83	29,756	61,8	61,8	51,40	37 . 52,60		15 . 26,23	79 . 40 . 7,14	☽.
6,36	23 . 47 . 29,74	29,570	55,5	53,0	25,25				61 . 35 . 3,27	Pollux R.
	23 . 47 . 27,71								61 . 35 . 1,24	Pollux.
	30 . 1 . 5,08				33,09	2,77			67 . 48 . 43,68	Mars.
	34 . 27 . 1,50	29,564		55,5	39,08	0,83	8,538	16,13	72 . 15 . 4,16	Jupiter.
	38 . 55 . 31,80	29,550	56,3	56,0	45,93	8,29	11,420	14,18	76 . 43 . 3,54	Venus.
	54 . 35 . 41,16	29,508	59,7	60,2	1 . 19,11	6,96		15 . 59,90	92 . 8 . 1,69	☉.
	54 . 3 . 39,93				1 . 17,58	6,91			92 . 7 . 58,78	☉.
7,24	− 39 . 20 . 8,18	29,488	59,5	59,6	46,18				− 1 . 33 . 46,08	Polaris SP. R.
	− 39 . 20 . 8,44								− 1 . 33 . 46,34	Polaris SP.
6,89	13 . 34 . 18,61	29,434	56,8	56,0	13,69				51 . 21 . 40,58	α Lyræ R.
	13 . 34 . 17,65								51 . 21 . 39,62	α Lyræ.
	63 . 56 . 57,63	29,432	55,0	53,4	1 . 55,99	0,40			101 . 46 . 1,50	Uranus.
7,68	− 65 . 7 . 10,68		53,7	52,2	2 . 2,50				− 27 . 22 . 4,90	α U. Maj. SP. R.
	− 65 . 7 . 10,07								− 27 . 22 . 4,29	α Urs. Maj. SP.
	73 . 48 . 4,48			51,3	3 . 14,27	4,00			111 . 38 . 23,03	Ceres.
7,18	24 . 1 . 0,79				25,49				61 . 48 . 34,56	α AndromedæR.
	24 . 1 . 0,40								61 . 48 . 34,17	α Andromedæ.
	39 . 17 . 49,18	29,270	51,0	50,7	46,61	8,17	11,387	13,86	77 . 5 . 22,04	Venus.
8,89	− 9 . 40 . 54,06	29,450	46,8	44,8	9,90				28 . 6 . 4,32	α Cephei R.
	− 9 . 40 . 51,02								28 . 6 . 7,36	α Cephei.
8,16	− 67 . 56 . 37,12				2 . 22,22				− 30 . 11 . 51,06	υ U. Maj. SP. R.
	− 67 . 56 . 35,54								− 30 . 11 . 49,48	υ Urs. Maj. SP.
7,14	53 . 18 . 7,79				1 . 17,70				91 . 6 . 33,77	α Aquarii R.
	53 . 18 . 7,33								91 . 6 . 33,31	α Aquarii.
	63 . 58 . 10,10		46,4		1 . 58,24	0,40			101 . 47 . 16,22	Uranus.
	73 . 50 . 58,26	29,460	45,0	42,6	3 . 18,65	3,98			111 . 41 . 21,21	Ceres.
8,41	− 9 . 40 . 52,86	28,900	50,5	49,4	9,62				28 . 6 . 5,80	α Cephei R.
	− 9 . 40 . 50,79								28 . 6 . 7,87	α Cephei.
6,56	− 67 . 56 . 39,73				2 . 18,25				− 30 . 11 . 49,70	υ U. Maj. SP. R.
	− 67 . 56 . 41,35								− 30 . 11 . 51,32	υ Urs. Maj. SP.
	63 . 58 . 46,98	28,860	49,7	48,9	1 . 54,96	0,40			101 . 47 . 49,81	Uranus.

Coincidence of Micrometer Wire with fixed Wire = $10^{r},086$. One revolution = 20″,843.
Correction for Runs = − 5″,1. From Sept. 26. = − 4″,2. From Sept. 30 = − 3″,9.
Adopted Zenith Point = 234° . 18′ . 7″,37.
Assumed Co-latitude = 37° . 47′ . 8″,28.
The runs were taken Sept. 26. 2^{h}, and Sept. 30. 22^{h}. Coincidence of wires Sept. 28. 10^{h}, found unaltered. Sept. 26. 6^{h}, Molyneux fast on Hardy $1^{m} . 12^{s},4$.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Oct. 2	(*a*) ☽ S.L.	259 . 50	4 . 28,5	26,7	26,6	30,0	28,0	30,2		+ 0,23	259 . 54 . 27,98	G.
Oct. 3	(*b*) α Lyræ R. M.	40 . 40	3 . 12,2	10,5	9,7	12,5	5,4	13,7	8,204	+ 39,22	40 . 43 . 49,47	G.
	α Lyræ	247 . 50	2 . 25,0	22,0	21,8	23,8	20,0	26,3			247 . 52 . 22,83	G.
	γ Aquilæ R. M.	12 . 15	3 . 19,7	18,2	18,0	19,8	16,0	21,2	6,837	+ 1 . 7,72	12 . 19 . 26,10	G.
	γ Aquilæ	276 . 15	1 . 51,2	49,0	48,4	49,9	45,6	51,1			276 . 16 . 48,97	G.
	β Aquilæ R. M.	8 . 5	0 . 12,2	11,5	11,5	12,6	8,5	15,0	6,138	+ 1 . 22,29	8 . 6 . 34,14	G.
	β Aquilæ	280 . 25	4 . 41,7	39,5	41,2	41,8	40,0	43,2			280 . 29 . 40,62	G.
	(*c*) Pallas	284 . 25	2 . 35,3	35,0	34,0	35,5	33,2	37,7			284 . 27 . 34,78	G.
	β Cephei R. M.	71 . 55	1 . 19,8	18,2	17,7	21,6	13,6	21,8	11,590	− 31,34	71 . 55 . 47,28	G.
	β Cephei	216 . 40	0 . 29,2	26,1	26,0	28,6	22,3	29,8			216 . 40 . 26,93	G.
	υ U. Maj. SP. R. M.	122 . 15	0 . 38,0	36,5	37,0	39,9	36,0	40,8	12,573	− 51,85	122 . 14 . 46,10	G.
	υ Urs. Maj. SP.	166 . 20	1 . 29,9	28,2	29,0	29,8	28,0	32,0			166 . 21 . 29,28	G.
	Ceres	308 . 10	2 . 3,4	1,5	2,8	4,6	1,7	4,4			308 . 12 . 2,80	G.
	Mars center	264 . 45	4 . 46,8	45,3	46,8	47,5	41,3	48,3			264 . 49 . 45,38	G.
	(*d*) ☽ S.L.	261 . 30	3 . 22,4	19,0	20,7	24,1	15,0	22,8		+ 1,82	261 . 33 . 22,05	G.
	☽ S.L. M.	261 . 30	3 . 22,4	19,0	20,7	24,1	15,0	22,8	10,010	+ 1,59	261 . 33 . 21,82	G.
	☽ S.L. M.	261 . 30	3 . 22,4	19,0	20,7	24,1	15,0	22,8	9,965	+ 2,52 − 1,82	261 . 33 . 20,93	G.
	Jupiter N.L.	269 . 0	0 . 52,8	51,4	51,0	53,2	46,9	54,6			269 . 0 . 51,53	G.
	Venus S.L.	274 . 25	1 . 15,0	13,2	15,8	16,7	13,0	17,1			274 . 26 . 14,97	G.
Oct. 4	⊙ S.L. M.	291 . 10	4 . 14,5	15,6	14,5	17,2	15,8	16,3	12,150	− 43,02	291 . 13 . 32,08	G.
	⊙ N.L.	290 . 40	1 . 27,3	27,0	25,0	30,2	26,3	30,2			290 . 41 . 27,47	G.
	(*e*) Polaris SP. R. M.	93 . 35	4 . 15,8	14,8	14,8	18,3	11,2	16,8	13,051	− 1 . 1,80	93 . 38 . 12,93	G.
	Polaris SP.	194 . 55	2 . 60,2	58,8	60,3	60,7	58,0	62,2			194 . 57 . 59,65	G.
	α Cephei R. M.	63 . 55	4 . 24,4	23,0	22,8	25,0	23,2	26,8	11,210	− 23,42	63 . 59 . 0,21	G.
	α Cephei	224 . 35	2 . 16,8	14,0	13,8	16,9	13,5	18,7			224 . 37 . 15,32	G.
	β Aquarii R. M.	355 . 45	4 . 19,3	17,7	19,0	20,3	21,6	22,0	9,055	+ 21,49	355 . 49 . 40,91	G.
	β Aquarii	292 . 45	1 . 33,3	31,0	30,4	34,3	27,0	35,4			292 . 46 . 31,70	G.
	Uranus	298 . 15	3 . 37,1	34,8	35,7	37,8	35,2	39,0			298 . 18 . 36,13	G.
	α U. Maj. SP. R. M.	119 . 25	1 . 19,0	17,8	17,9	21,0	14,0	22,0	12,968	− 1 . 0,07	119 . 25 . 18,38	G.
	α Urs. Maj. SP.	169 . 10	0 . 55,5	54,2	55,0	57,0	53,4	59,6			169 . 10 . 55,67	G.
	Ceres	308 . 10	2 . 35,5	35,0	33,8	37,5	36,2	38,4			308 . 12 . 35,73	G.
	α Andromedæ R.M.	30 . 15	1 . 22,4	20,5	19,7	23,5	17,5	25,6	7,890	+ 45,77	30 . 17 . 7,14	G.
	α Andromedæ	258 . 15	4 . 6,4	4,0	6,0	7,7	6,7	8,9			258 . 19 . 6,08	G.
	Mars center	264 . 55	0 . 10,3	7,3	8,8	10,5	4,2	13,2			264 . 55 . 9,02	G.
	(*f*) ☽ S.L. M.	264 . 30	0 . 19,1	15,0	19,0	21,0	15,5	22,1	16,015	− 2 . 3,59 + 3,52	264 . 28 . 18,51	G.
	☽ S.L. M.	264 . 30	0 . 19,1	15,0	19,0	21,0	15,5	22,1	15,964	− 2 . 2,52 + 1,76	264 . 28 . 17,82	G.
	☽ S.L. M.	264 . 30	0 . 19,1	15,0	19,0	21,0	15,5	22,1	15,818	− 1 . 59,48	264 . 28 . 19,10	G.
	☽ S.L. M.	264 . 30	0 . 19,1	15,0	19,0	21,0	15,5	22,1	15,760	− 1 . 58,27 − 1,76	264 . 28 . 18,55	G.
	☽ S.L. M.	264 . 30	0 . 19,1	15,0	19,0	21,0	15,5	22,1	15,635	− 1 . 55,66 − 3,52	264 . 28 . 19,40	G.
	Jupiter S.L.	269 . 0	3 . 57,5	55,5	57,9	56,8	53,8	59,7			269 . 3 . 56,35	G.
	Venus S.L.	274 . 35	4 . 59,2	57,9	61,2	61,4	60,4	62,2			274 . 39 . 59,73	G.
Oct. 5	⊙ N.L. M.	291 . 0	4 . 11,6	13,8	11,8	15,0	11,4	13,8	8,920	+ 24,30	291 . 4 . 36,65	G.
	⊙ S.L.	291 . 35	1 . 38,7	41,6	36,4	41,2	36,3	41,5			291 . 36 . 39,07	G.
	(*g*) Polaris SP. R. M.	93 . 35	4 . 12,5	13,5	11,9	15,9	10,4	15,6	12,852	− 57,66	93 . 38 . 15,09	G.
	Polaris SP.	194 . 55	3 . 5,0	5,0	4,4	5,7	1,4	7,2			194 . 58 . 4,38	G.
	α Cephei R. M.	63 . 55	4 . 17,4	18,0	16,5	18,1	13,0	21,0	10,842	− 15,76	63 . 59 . 1,01	G.
	α Cephei	224 . 35	2 . 16,6	12,2	13,2	12,3	11,2	16,2			224 . 37 . 13,32	G.

(*a*) At the comb: not good.

(*b*) Unsteady blur.

(*c*) Extremely faint.

(*d*) At the 1st, 3d, and 5th wires: faint, and the limb uneven.

(*e*) Rather unsteady.

(*f*) At the five wires: exceedingly faint and rather doubtful.

(*g*) Not good.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	25 . 36 . 20,61	28,754	48,6	46,8	27,04	23 . 14,32		14 . 46,73	62 . 45 . 54,88	☽.
6,15	13 . 34 . 17,90	29,240	49,4	48,9	13,79				51 . 21 . 39,97	α Lyræ R.
	13 . 34 . 15,46								51 . 21 . 37,53	α Lyræ.
7,54	41 . 58 . 41,27	29,260	46,5	45,2	51,79				79 . 46 . 41,34	γ Aquilæ R.
	41 . 58 . 41,60								79 . 46 . 41,67	γ Aquilæ.
7,38	46 . 11 . 33,23				59,98				83 . 59 . 41,49	β Aquilæ R.
	46 . 11 . 33,25								83 . 59 . 41,51	β Aquilæ.
	50 . 9 . 27,41	29,270	45,0	43,6	1 . 9,18	2,39			87 . 57 . 42,48	Pallas.
7,11	−17 . 37 . 39,91	29,280	44,7	43,3	18,39				20 . 9 . 9,98	β Cephei R.
	−17 . 37 . 40,44								20 . 9 . 9,45	β Cephei.
7,69	−67 . 56 . 38,73				2 . 21,84				−30 . 11 . 52,29	υ U. Min. SP. R.
	−67 . 56 . 38,09								−30 . 11 . 51,65	υ Urs. Min. SP.
	73 . 53 . 55,43	29,300	43,8	42,2	3 . 18,36	3,94			111 . 44 . 18,13	Ceres.
	30 . 31 . 38,01	29,370	42,5	39,4	34,49	2,89			68 . 19 . 17,89	Mars.
	27 . 15 . 14,68								64 . 23 . 20,95	☽.
	27 . 15 . 14,45				30,14	24 . 42,61		14 . 49,54	64 . 23 . 20,72	☽.
	27 . 15 . 13,56								64 . 23 . 19,83	☽.
	34 . 42 . 44,16	29,378	42,6	41,6	40,35	0,85	8,558	15,93	72 . 30 . 47,87	Jupiter.
	40 . 8 . 7,60	29,398	44,0	44,4	48,85	7,95	11,253	12,47	77 . 55 . 44,31	Venus.
	56 . 55 . 24,71	29,420	51,0	52,6	1 . 27,38	7,16		16 . 1,50	94 . 27 . 51,71	⊙.
	56 . 23 . 20,10				1 . 25,63	7,12			94 . 27 . 48,39	⊙.
6,29	−39 . 20 . 5,56				46,74				−1 . 33 . 44,02	Polaris SP. R.
	−39 . 20 . 7,72								−1 . 33 . 46,18	Polaris SP.
7,77	−9 . 40 . 52,84	29,510	48,5	47,2	9,87				28 . 6 . 5,57	α Cephei R.
	−9 . 40 . 52,05								28 . 6 . 6,36	α Cephei.
6,31	58 . 28 . 26,46				1 . 34,03				96 . 17 . 8,77	β Aquarii R.
	58 . 28 . 24,33								96 . 17 . 6,64	β Aquarii.
	64 . 0 . 28,76	29,534	47,8	46,0	1 . 58,48	0,40			101 . 49 . 35,12	Uranus.
7,03	−65 . 7 . 11,01	29,540	47,2	45,2	2 . 4,72				−27 . 22 . 7,45	α U. Maj. SP. R.
	−65 . 7 . 11,70								−27 . 22 . 8,14	α Urs. Maj. SP.
	73 . 54 . 28,36				3 . 18,82	3,93			111 . 44 . 51,53	Ceres.
6,61	24 . 1 . 0,23	29,550	46,5	44,3	25,96				61 . 48 . 34,47	α AndromedæR.
	24 . 0 . 58,71								61 . 48 . 32,95	α Andromedæ.
	30 . 37 . 1,65	29,664	43,8	39,8	34,93	2,91			68 . 24 . 41,95	Mars.
	30 . 10 . 11,14	29,696	42,5	41,0					67 . 15 40,14	☽.
	30 . 10 . 10,45								67 . 15 . 39,45	☽.
	30 . 10 . 11,73				34,27	27 . 18,50		14 . 55,05	67 . 15 . 40,73	☽.
	30 . 10 . 11,18								67 . 15 . 40,18	☽.
	30 . 10 . 12,03								67 . 15 . 41,03	☽.
	34 . 45 . 48,98				40,91	0,85	11,645	16,25	72 . 33 . 21,07	Jupiter.
	40 . 21 . 52,36	29,718	43,5	42,7	49,95	7,90	11,315	13,15	78 . 9 . 29,54	Venus.
	56 . 46 . 29,28	29,760	51,8	53,7	1 . 27,70	7,15		16 . 1,80	94 . 50 . 59,91	⊙.
	57 . 18 . 31,70				1 . 29,50	7,20			94 . 51 . 0,48	⊙.
9,74	−39 . 20 . 7,72				47,17				−1 . 33 . 46,61	Polaris SP. R.
	−39 . 20 . 2,99								−1 . 33 . 41,88	Polaris SP.
7,17	−9 . 40 . 53,64	29,865	50,0	49,0	9,95				28 . 6 . 4,69	α Cephei R.
	−9 . 40 . 54,05								28 . 6 . 4,28	α Cephei.

Coincidence of Micrometer Wire with fixed Wire $=10^{r},086$. One revolution $=20'',843$.
Correction for Runs $=-3'',9$.
Adopted Zenith Point $= 234^\circ . 18' . 7'',37$.
Assumed Co-latitude $= 37^\circ . 47' . 8'',28$.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Oct. 5	β Aquarii R. M.	355.45	4.12,8	14,0	13,4	15,5	14,0	16,6	8,680	+ 29,31	355.49.43,14	G.
	β Aquarii	292.45	1.32,5	33,2	28,6	34,7	28,0	35,4			292.46.31,87	G.
	υ U. Maj. SP. R. M.	122.15	0.16,0	15,0	13,5	18,2	11,6	20,8	11,505	− 29,58	122.14.46,24	G.
	υ Ursæ Majoris SP.	166.20	1.32,0	32,3	31,2	33,4	32,4	35,6			166.21.32,62	G.
	Uranus	298.15	4.10,3	10,4	9,7	11,4	10,0	12,8			298.19.10,22	G.
Oct. 6	(a) Venus S.L.	275. 5	3.50,0	51,7	49,2	52,1	48,0	52,1			275. 8.50,17	G.
Oct. 10	⊙ S.L. M.	293.30	1.14,0	15,5	14,8	18,4	12,9	18,1	9,693	+ 7,98	293.31.23,48	G.
	⊙ N.L.	292.55	4.17,3	19,0	17,0	20,6	19,4	21,2			292.59.18,68	G.
	(b) α Andromedæ R.M.	30.15	1.20,0	22,7	19,2	23,3	17,3	27,2	7,950	+ 44,32	30.17. 5,80	G.
	(c) α Andromedæ	258.15	4. 5,2	7,3	6,7	8,2	7,2	10,5			258.19. 7,13	G.
	Venus S.L.	276.10	1.51,3	52,7	50,5	53,7	48,1	55,1			276.11.51,73	G.
Oct. 11	⊙ N.L. M.	293.20	2.20,3	22,2	19,5	23,3	21,0	23,9	11,068	− 20,68	293.22. 0,80	G.
	⊙ S.L.	293.50	4. 4,0	5,8	4,9	6,9	3,2	6,9			293.54. 4,90	G.
	(c) α Cephei R. M.	63.55	4. 8,9	11,5	10,5	11,9	8,4	13,1	10,418	− 7,12	63.59. 3,20	G.
	α Cephei	224.35	2.13,7	12,5	11,2	14,5	12,7	16,7			224.37.13,35	G.
	Uranus	298.20	2.13,0	13,5	13,0	15,1	9,0	16,1			298.22.13,08	G.
	Ceres	308.10	0.57,8	58,8	56,6	59,3	55,0	60,8			308.10.57,97	G.
	λ Draco. SP. R. M.	111.50	0.16,3	16,8	15,5	19,0	12,8	20,5	11,130	− 21,96	111.49.54,82	G.
	λ Draconis SP.	176.45	1.21,4	21,2	21,2	24,4	23,4	26,6			176.46.22,90	G.
	(d) γ U. Maj. SP. R. M.	127.27	0.20,0	19,5	18,5	21,5	18,5	23,6	14,093	− 1.23,73 + 1,03	127.25.57,35	G.
	(e) γ Ursæ Majoris SP.	161.10	0.21,8	21,7	20,0	22,4	18,6	26,8		− 4,35	161.10.17,50	G.
	Jupiter N.L.	269.20	0.32,4	32,2	31,2	35,7	30,8	36,8			269.20.33,13	G.
	Venus S.L.	276.25	3.40,8	42,0	40,0	42,4	40,6	43,6			276.28.41,22	G.
	(f) Polaris SP. R. M.	93.35	4.14,1	13,3	14,0	17,5	13,5	15,7	13,108	− 1. 3,20	93.38.11,08	G.
	(g) Polaris SP.	194.55	3. 4,4	4,4	3,4	6,0	0,2	6,8			194.58. 3,92	G.
Oct. 12	⊙ S.L. M.	294.15	2.12,8	14,4	12,5	16,2	9,4	16,0	11,670	− 33,22	294.16.40,13	G.
	⊙ N.L.	293.40	4.33,2	35,4	34,2	37,2	36,0	36,7			293.44.35,02	G.
	(h) Mars S.L.	265.40	0.52,8	53,8	52,4	56,4	49,0	55,4			265.40.53,22	G.
	Polaris SP. R. M.	93.35	4.12,2	12,4	11,0	15,9	12,0	13,2	13,002	− 1. 1,00	93.38.11,40	G.
	Polaris SP.	194.55	2.61,8	61,2	61,5	64,4	59,8	65,0			194.58. 2,00	G.
Oct. 13	⊙ N.L. M.	294. 5	2.12,2	11,0	12,2	14,0	8,4	15,0	10,410	− 6,96	294. 7. 4,97	G.
	⊙ S.L.	294.35	4. 7,8	8,0	8,2	11,0	9,0	9,5			294.39. 8,53	G.
	α Cephei R. M.	63.55	4.10,4	12,0	10,4	13,2	11,0	13,2	10,472	− 8,26	63.59. 3,06	G.
	α Cephei	224.35	2.14,9	13,0	12,0	14,5	10,0	17,1			224.37.13,38	G.
	β Cephei R. M.	71.55	1.15,8	16,0	14,4	19,8	15,2	19,3	11,207	− 23,57	71.55.53,06	G.
	β Cephei	216.40	0.24,8	23,3	22,0	26,9	20,1	27,3			216.40.24,03	G.
	υ U. Maj. SP. R. M.	122.15	0.16,9	17,2	16,3	21,4	14,3	20,2	11,397	− 27,55	122.14.50,13	G.
	υ Ursæ Majoris SP.	166.20	1.24,8	24,4	22,8	27,4	24,8	28,2			166.21.25,27	G.
	Uranus	298.20	3. 5,5	5,2	5,2	7,8	4,1	7,4			298.23. 5,58	G.
	Polaris R. M.	90.30	1.16,9	16,7	15,0	18,8	14,0	20,0	11,155	− 22,49	90.30.54,29	G.
	Polaris	198. 5	0.21,4	20,5	18,4	24,3	15,5	26,5			198. 5.21,07	G.
	Jupiter N.L.	269.25	0.10,3	10,3	10,3	14,7	9,5	14,2			269.25.11,53	G.
	Venus S.L.	277. 0	3.32,0	33,1	32,1	35,7	32,2	34,8			277. 3.32,98	G.
	Polaris SP. R. M.	93.35	4.13,9	14,7	13,7	17,5	14,1	16,2	13,148	− 1. 4,03	93.38.10,59	G.
	Polaris SP.	194.55	3. 4,0	5,7	4,4	7,2	1,8	8,0			194.58. 4,90	G.
Oct. 14	⊙ S.L. M.	295. 0	2.15,7	15,9	15,8	18,7	11,1	18,8	12,248	− 45,27	295. 1.30,51	G.
	⊙ N.L.	294.25	4.23,5	24,7	23,0	26,4	21,0	27,0			294.29.23,85	G.

(a) Very cloudy.

(b) Large blur.

(c) In each of these observations the counterpoise was heard to move on turning the circle for the direct observation.

(d) At the 2^d wire: not good.

(e) At the distance of three intervals: delayed by a cloud passing.

(f) Faint.

(g) Dancing.

(h) Ill-defined: shutters just opened.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
7,51	58 . 28 . 24,23	29,865	50,0	49,0	1 . 34,81				96 . 17 . 7,32	β Aquarii R.
	58 . 28 . 24,50								96 . 17 . 7,59	β Aquarii.
9,43	– 67 . 56 . 38,87		49,4	48,4	2 . 23,14				– 30 . 11 . 53,73	υ U. Maj. SP. R.
	– 67 . 56 . 34,75								– 30 . 11 . 49,61	υ Urs. Maj. SP.
	64 . 1 . 2,85		49,0	47,8	1 . 59,41	0,40			101 . 50 . 10,14	Uranus.
	40 . 50 . 42,80	29,424	54,0	55,7	49,00	7,81	11,210	12,15	78 . 38 . 20,12	Venus.
	59 . 13 . 16,11	29,114	55,8	57,0	1 . 33,65	7,36		16 . 3,10	96 . 45 47,58	⊙.
	58 . 41 . 11,31				1 . 31,71	7,32			96 . 45 . 47,08	⊙.
6,47	24 . 1 . 1,57	29,280	54,0	53,2	25,27				61 . 48 . 35,12	α Andromedæ R.
	24 . 0 . 59,76								61 . 48 . 33,31	α Andromedæ.
	41 . 53 . 44,36	29,032	54,6	54,5	50,28	7,65	11,155	11,61	79 . 41 . 23,66	Venus.
	59 . 3 . 53,41	29,202	55,3	55,3	1 . 33,68	7,35		16 . 3,40	97 . 8 . 31,42	⊙.
	59 . 35 . 57,53				1 . 35,68	7,39			97 . 8 . 30,70	⊙.
8,28	– 9 . 40 . 55,83	29,280	52,8	52,2	9,70				28 . 6 . 2,75	α Cephei R.
	– 9 . 40 . 54,02								28 . 6 . 4,56	α Cephei.
	64 . 4 . 5,71			51,8	1 . 56,38	0,40			101 . 53 . 9,97	Uranus.
	73 . 52 . 50,60	29,290	52,0	51,0	3 . 14,46	3,83			111 . 43 . 9,51	Ceres.
8,86	– 57 . 31 . 47,45				1 . 29,30				– 19 . 46 . 8,47	λ DraconisSP.R.
	– 57 . 31 . 44,47								– 19 . 46 . 5,49	λ Draconis SP.
7,42	– 73 . 7 . 49,98		51,7	50,5	3 . 5,74				– 35 . 23 . 47,44	γ U. Maj. SP. R.
	– 73 . 7 . 49,87								– 35 . 23 . 47,33	γ Urs. Maj. SP.
	35 . 2 . 25,76	29,454	50,6	48,7	40,35	0,87	8,560	15,80	72 . 50 . 29,32	Jupiter.
	42 . 10 . 33,85	29,424	51,0	51,1	51,81	7,62	11,200	12,10	79 . 58 . 14,22	Venus.
7,50	– 39 . 20 . 3,71	29,475	55,4	56,1	46,49				– 1 . 33 . 41,92	Polaris SP. R.
	– 39 . 20 . 3,45								– 1 . 33 . 41,66	Polaris SP.
	59 . 58 . 32,76	29,475	55,5	56,3	1 . 37,84	7,42		16 . 3,70	97 . 31 . 7,76	⊙.
	59 . 26 . 27,65				1 . 35,78	7,38			97 . 31 . 8,03	⊙.
	31 . 22 . 45,85	28,980	53,7	53,1	34,23	3,10	10,484	4,26	69 . 10 . 21,00	Mars.
6,70	– 39 . 20 . 4,03	29,086	55,6	56,2	45,87				– 1 . 33 . 41,62	Polaris SP. R.
	– 39 . 20 . 5,37								– 1 . 33 . 42,96	Polaris SP.
	59 . 48 . 57,60	29,090	55,7	56,0	1 . 36,00	7,41		16 . 4,00	97 . 53 . 38,47	⊙.
	60 . 21 . 1,16				1 . 38,08	7,45			97 . 53 . 36,07	⊙.
8,22	– 9 . 40 . 55,69	29,284	53,0	52,0	9,70				28 . 6 . 2,89	α Cephei R.
	– 9 . 40 . 53,99								28 . 6 . 4,59	α Cephei.
8,55	– 17 . 37 . 45,69				18,07				20 . 9 . 4,52	β Cephei R.
	– 17 . 37 . 43,34								20 . 9 . 6,87	β Cephei.
7,70	– 67 . 56 . 42,76				2 . 19,35				– 30 . 11 . 53,83	υ U. Maj. SP. R.
	– 67 . 56 . 42,10								– 30 . 11 . 53,17	υ Urs. Maj. SP.
	64 . 4 . 58,21	29,298	53,2	52,3	1 . 56,41	0,40			101 . 54 . 2,50	Uranus.
7,68	– 36 . 12 . 46,92	29,336	53,8	53,5	41,56				1 . 33 . 39,80	Polaris R.
	– 36 . 12 . 46,30								1 . 33 . 40,42	Polaris.
	35 . 7 . 4,16	29,540	53,2	53,0	40,24	0,88	8,580	15,60	72 . 55 . 7,40	Jupiter.
	42 . 45 . 25,61	29,612	53,5	53,5	52,95	7,55	11,128	11,35	80 . 33 . 7,94	Venus.
7,75	– 39 . 20 . 3,22	29,728	56,4	57,2	46,78				– 1 . 33 . 41,72	Polaris SP. R.
	– 39 . 20 . 2,47								– 1 . 33 . 40,97	Polaris SP.
	60 . 43 . 23,14	29,738	56,8	57,7	1 . 41,44	7,48		16 . 4,20	98 . 16 . 1,18	⊙.
	60 . 11 . 16,48				1 . 39,27	7,44			98 . 16 . 0,79	⊙.

Coincidence of Micrometer Wire with fixed Wire = 10ʳ,086. From Oct. 6. = 10ʳ,076. One revolution = 20″,843.
Correction for Runs = – 3″,9. From Oct. 6. = – 2″,8.
Adopted Zenith Point = 234°. 18′. 7″,37.
Assumed Co-latitude = 37°. 47′. 8″,28.
Runs and coincidence of wires taken Oct. 13. 22ʰ.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Oct. 15	γ Aquilæ R. M.	12 . 15	3 . 15,2	16,0	14,0	16,8	10,4	19,2	6,690	+ 1 . 10,58	12 . 19 . 25,55	G.
	γ Aquilæ............	276 . 15	1 . 48,9	50,9	47,4	51,5	45,8	52,3			276 . 16 . 49,30	G.
	(a) α Aquilæ R. M.	10 . 25	2 . 17,3	19,0	15,4	20,4	16,2	20,8	84,304	+ 5 . 28,74	10 . 32 . 46,71	G.
	(b) α Aquilæ............	278 . 0	3 . 26,0	27,4	24,2	29,0	24,9	28,9		+ 1,73	278 . 3 . 28,15	G.
	(c) α^1 Capricorni R. M.	349 . 0	3 . 17,9	20,2	18,1	21,8	15,0	22,8	99,907	+ 3 . 31,95 − 1,50	349 . 6 . 49,43	G.
	α^1 Capricorni........	299 . 25	4 . 22,8	23,2	21,5	24,4	22,2	25,0		+ 1,50	299 . 29 . 24,27	G.
	(c) α^2 Capricorni R. M.	349 . 0	3 . 17,9	20,2	18,1	21,8	15,0	22,8	6,532	+ 1 . 13,86 − 1,50	349 . 4 . 31,34	G.
	α^2 Capricorni M....	299 . 25	4 . 22,8	23,2	21,5	24,4	22,2	25,0	3,490	+ 2 . 17,28 + 1,50	299 . 31 . 41,55	G.
	(d) Pallas..................	286 . 30	0 . 35,8	37,0	34,0	38,8	31,9	40,3			286 . 30 . 36,25	G.
	α Cephei R. M......	63 . 55	4 . 16,2	18,8	16,9	19,3	19,0	20,0	10,790	− 14,88	63 . 59 . 3,09	G.
	α Cephei	224 . 35	2 . 13,8	13,4	12,5	14,2	9,7	17,0			224 . 37 . 13,23	G.
	Uranus	298 . 20	3 . 51,8	53,6	52,4	54,8	51,2	53,7			298 . 23 . 52,55	G.
	Ceres..................	308 . 5	0 . 32,7	34,3	30,8	35,8	27,8	37,0			308 . 5 . 23,02	G.
Oct. 16	δ Urs. Min. R. M. .	88 . 40	1 . 19,8	18,5	18,7	22,7	19,4	23,5	13,385	− 1 . 8,97	88 . 40 . 11,35	G.
	δ Ursæ Minoris.....	199 . 55	1 . 5,7	5,7	5,2	6,2	3,9	9,0			199 , 56 . 5,85	G.
	α Lyræ R. M.	40 . 40	4 . 13,0	14,1	12,5	16,5	11,4	17,4	11,195	− 23,32	40 . 43 . 50,43	G.
	α Lyræ	247 . 50	2 . 26,6	26,9	24,2	29,3	25,5	29,7			247 . 52 . 26,80	G.
	(e) Polaris SP. R. M. .	93 . 35	4 . 13,5	12,1	13,0	17,0	13,2	14,5	13,187	− 1 . 4,84	93 . 38 . 8,64	G.
	Polaris SP..........	194 . 55	3 . 8,0	7,2	6,4	9,9	2,4	9,8			194 . 58 . 7,00	G.
Oct. 17	☉ N.L. M..........	295 . 35	1 . 17,3	18,9	17,3	21,3	15,2	21,2	11,623	− 32,24	295 . 35 . 46,18	G.
	☉ S.L................	296 . 5	2 . 54,0	56,0	53,5	56,9	53,9	57,1			296 . 7 . 54,97	G.
	Arcturus R. M.	22 . 5	2 . 16,8	17,6	14,7	19,8	17,3	22,8	7,708	+ 49,36	22 . 8 . 7,31	G.
	Arcturus............	266 . 25	3 . 5,4	7,5	6,3	8,0	8,0	8,4			266 . 28 . 6,98	G.
Oct. 18	(f) ☽ S.L.	309 . 30	0 . 6,1	7,3	6,0	9,1	2,9	10,2		− 8,08	309 . 29 . 58,85	G.
	☽ S.L. M...........	309 . 30	0 . 6,1	7,3	6,0	9,1	2,9	10,2	10,280	− 4,25 − 4,04	309 . 29 . 58,64	G.
	☽ S.L. M.	309 . 30	0 . 6,1	7,3	6,0	9,1	2,9	10,2	10,548	− 9,84	309 . 29 . 57,09	G.
	☽ S.L. M...........	309 . 30	0 . 6,1	7,3	6,0	9,1	2,9	10,2	10,810	− 15,30 + 4,04	309 . 29 . 55,67	G.
	☽ S.L. M............	309 . 30	0 . 6,1	7,3	6,0	9,1	2,9	10,2	10,960	− 18,42 + 8,08	309 . 29 . 56,59	G.
	(g) β Cephei R. M......	71 . 55	1 . 15,2	17,0	14,7	19,4	14,9	20,2	11,060	− 20,51	71 . 55 . 56,27	G.
	(h) β Cephei.............	216 . 40	0 . 25,0	25,8	23,8	27,9	19,4	29,2		+ 1,23	216 . 40 . 26,38	G.
	γ Capricorni........	303 . 50	2 . 17,2	18,1	16,0	20,4	17,0	21,3			303 . 52 . 18,12	G.
	δ Capricorni.........	303 . 20	0 . 28,6	30,5	28,1	32,2	24,2	34,2			303 . 20 . 29,58	G.
	(i) Uranus	298 . 20	4 . 60,0	61,8	60,0	63,3	53,5	63,8			298 . 25 . 0,40	G.
	(j) Venus S.L.	278 . 35	2 . 30,0	29,7	26,7	32,5	28,5	31,9			278 . 37 . 29,65	G.
	(k) Polaris SP. R. M. .	93 . 35	4 . 14,8	13,7	12,8	17,0	13,0	16,8	13,200 12 . 59 . 30	− 1 . 5,11 + 0,88	93 . 38 . 10,05	G.
	Polaris SP..........	194 . 55	3 . 11,8	10,3	10,3	13,5	7,4	14,3			194 . 58 . 10,97	G.
Oct. 19	☉ N.L. M.	296 . 15	4 . 14,0	16,0	13,5	19,1	11,1	18,0	9,650	+ 8,99	296 . 19 . 23,87	G.
	☉ S.L................	296 . 50	1 . 30,8	33,3	28,4	36,5	27,3	36,0			296 . 51 . 31,92	G.
	Arcturus R. M.....	22 . 5	3 . 32,1	33,0	27,1	33,0	32,6	36,4	11,108	− 21,51	22 . 8 . 10,52	G.
	Arcturus............	266 . 25	3 . 8,0	10,5	9,0	11,4	3,8	11,8			266 . 28 . 8,80	G.
	α Lyræ R. M........	40 . 40	4 . 11,8	13,8	11,4	16,8	11,2	16,3	11,070	− 20,72	40 . 43 . 52,45	G.
	α Lyræ................	247 . 50	2 . 28,8	28,0	26,2	32,0	24,7	31,6			247 . 52 . 28,32	G.
	α Cephei R. M......	63 . 55	4 . 17,9	19,7	18,0	21,0	15,2	21,2	10,694	− 12,89	63 . 59 . 5,54	G.
	α Cephei	224 . 35	2 . 16,4	15,7	13,0	18,0	10,8	19,0			224 . 37 . 15,27	G.

(a) Too near the top of the field to be good.
(b) At the 5th wire.
(c) At 1st and 5th wires. The micrometer reading of α^1 was put down $0^r,907$.
(d) Guess-work.
(e) Very faint.
(f) At the five wires: rather faint. Before this observation I placed the telescope in a vertical position, with object-glass downwards, and gently tapped it a considerable time, when the shifting-weight fell, and was heard to slide back on turning the telescope, leaving no doubt as to the seat of the disturbing cause. Zenith point changes here.
(g) Very faint and doubtful.
(h) At the 4th wire.
(i) No correction for runs.
(j) Shutters just opened.
(k) Clouds passing.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
7,43	41 . 58 . 41,82	29,820	55,8	54,8	51,75				79 . 46 . 41,85	γ Aquilæ R.
	41 . 58 . 41,93								79 . 56 . 41,96	γ Aquilæ.
7,43	43 . 45 . 20,66				55,07				81 . 33 . 24,01	α Aquilæ R.
	43 . 45 . 20,78								81 . 33 . 24,13	α Aquilæ.
6,85	65 . 11 . 17,94				2 . 3,83				103 . 0 . 30,05	α^1 Capricorni R.
	65 . 11 . 16,90								103 . 0 . 29,01	α^1 Capricorni.
6,45	65 . 13 . 36,03				2 . 4,05				103 . 2 . 48,36	α^2 Capricorni R.
	65 . 13 . 34,18								103 . 2 . 46,51	α^2 Capricorni.
	52 . 12 . 28,88	29,844	54,4	53,1	1 . 14,41	2,34			90 . 0 . 49,23	Pallas.
8,16	− 9 . 40 . 55,72	29,850	53,7	52,7	9,87				28 . 6 . 2,69	α Cephei R.
	− 9 . 40 . 54,14								28 . 6 . 4,27	α Cephei.
	64 . 5 . 45,18	29,864	53,5		1 . 58,62	0,40			101 . 54 . 51,68	Uranus.
	73 . 47 . 15,65	29,900			3 . 16,64	3,77			111 . 37 . 36,80	Ceres.
8,60	− 34 . 22 . 3,98	30,124	54,0	54,8	39,76				3 . 24 . 24,54	δ Urs. Min. R.
	− 34 . 22 . 1,52								3 . 24 . 27,00	δ Ursæ Minoris.
8,62	13 . 34 . 16,94				14,04				51 . 21 . 39,26	α Lyræ R.
	13 . 34 . 19,43								51 . 21 . 41,75	α Lyræ.
7,82	− 39 . 20 . 1,27		54,8	57,0	47,42				− 1 . 33 . 40,41	Polaris SP. R.
	− 39 . 20 . 0,37								− 1 . 33 . 39,51	Polaris SP.
	61 . 17 . 38,81	30,126	55,0	58,0	1 . 45,13	7,53		16 . 5,10	99 . 22 . 29,79	☉.
	61 . 49 . 47,60				1 . 47,49	7,57			99 . 22 . 30,70	☉.
7,15	32 . 10 . 0,06	30,100	55,5	59,8	36,18				69 . 57 . 44,52	Arcturus R.
	32 . 9 . 59,61								69 . 57 . 44,07	Arcturus.
	75 . 11 . 48,37	30,034	57,4	57,1	3 . 34,75	56 . 43,10		16 . 1,73	111 . 49 . 46,57	☽.
	75 . 11 . 48,16								111 . 49 . 46,36	☽.
	75 . 11 . 46,61								111 . 49 . 44,81	☽.
	75 . 11 . 45,19								111 . 49 . 43,39	☽.
	75 . 11 . 46,11								111 . 49 . 44,31	☽.
11,33	− 17 . 37 . 45,79				18,34				20 . 9 . 4,15	β Cephei R.
	− 17 . 37 . 44,10								20 . 9 . 5,84	β Cephei.
	69 . 34 . 7,64				2 . 33,60				107 . 23 . 49,52	γ Capricorni.
	69 . 2 . 19,10				2 . 29,43				106 . 51 . 56,81	δ Capricorni.
	64 . 6 . 49,92		56,8	56,2	1 . 58,54	0,40			101 . 55 . 56,34	Uranus.
	44 . 19 . 19,17	30,128	57,0	56,8	56,51	7,41	11,060	10,66	82 . 7 . 5,89	Venus.
10,51	− 39 . 19 . 59,57	30,172	57,5	58,5	47,35				− 1 . 33 . 38,64	Polaris SP. R.
	− 39 . 19 . 59,51								− 1 . 33 . 38,58	Polaris SP.
	62 . 1 . 13,39	30,186	57,6	59,2	1 . 48,29	7,59		16 . 5,60	100 . 6 . 7,97	☉.
	62 . 33 . 21,44				1 . 50,75	7,62			100 . 6 . 7,25	☉.
9,66	32 . 9 . 59,96	30,192	57,8	58,4	36,38				69 . 57 . 44,62	Arcturus R.
	32 . 9 . 58,32								69 . 57 . 42,98	Arcturus.
10,39	13 . 34 . 18,03	30,240	56,5	55,5	14,07				51 . 21 . 40,38	α Lyræ R.
	13 . 34 . 17,84								51 21 . 40,19	α Lyræ.
10,41	− 9 . 40 . 55,06	30,282	53,7	52,7	10,02				28 . 6 . 3,20	α Cephei R.
	− 9 . 40 . 55,21								28 . 6 . 3,05	α Cephei.

Coincidence of Micrometer Wire with fixed Wire = 10r,076. One revolution = 20″,843.
Correction for Runs = − 2″,8.
Adopted Zenith Point = 234° . 18′ . 7″,37. From Oct. 18. = 234°. 18′. 10″,48.
Assumed Co-latitude = 37° . 47′ . 8″,28.
The telescope received a slight blow against the observing chair, Oct. 18; probably not such as to cause the change of Zenith point, which, it is more likely, was owing to the shifting of the counterpoise.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Oct. 19	β Aquarii R. M. ...	355 . 45	4 . 15,0	16,9	16,4	19,1	16,4	18,4	8,684	+ 29,01	355 . 49 . 45,64	G.
	β Aquarii............	292 . 45	1 . 35,0	35,9	32,6	38,3	29,4	37,7			292 . 46 . 34,67	G.
	γ Capricorni.........	303 . 50	2 . 12,2	13,0	11,5	15,5	8,5	15,9			303 . 52 . 12,57	G.
	δ Capricorni........	303 . 20	0 . 24,0	24,5	23,4	28,0	22,0	28,8			303 . 20 . 25,08	G.
	(a) ☽ S.L. M.............	304 . 30	4 . 6,9	7,0	7,4	9,2	5,0	9,5	10,780	– 14,67	304 . 33 . 52,45	G.
	☽ S.L. M.	304 . 30	4 . 6,9	7,0	7,4	9,2	5,0	9,5	11,010	– 19,47 + 4,94	304 . 33 . 52,59	G.
	☽ S.L. M.	304 . 30	4 . 6,9	7,0	7,4	9,2	5,0	9,5	11,250	– 24,46 + 9,88	304 . 33 . 52,54	G.
	Polaris R. M........	90 . 30	1 . 13,1	13,1	12,4	15,8	8,0	16,0	10,854	– 16,22	90 . 30 . 56,73	G.
	Polaris...............	198 . 5	0 . 25,0	24,2	21,5	29,0	20,2	29,0			198 . 5 . 24,78	G.
	(b) Mars center....	266 . 20	3 . 21,0	21,1	21,5	23,7	18,4	23,2			266 . 23 . 21,17	G.
	Jupiter N.L.	269 . 35	3 . 19,2	17,0	19,3	21,8	13,2	22,4			269 . 38 . 18,50	G.
	Venus S.L...........	278 . 55	2 . 23,6	22,1	20,8	25,1	17,5	25,7			278 . 57 . 22,25	G.
	Polaris SP. R. M. .	93 . 35	4 . 8,3	8,0	9,6	9,4	3,0	9,4	12,880	– 58,44	93 . 38 . 9,13	G.
	Polaris SP.	194 . 55	3 . 11,4	11,0	11,0	11,7	6,5	12,3			194 . 58 . 10,35	G.
Oct. 20	(c) ⊙ S.L. M............	297 . 10	4 . 17,8	18,8	17,5	21,2	15,1	20,2	13,507	– 1 . 11,52	297 . 13 . 6,35	G.
	⊙ N.L...............	296 . 40	0 . 56,0	58,0	56,8	59,7	50,0	58,3			296 . 40 . 56,35	G.
	α^2 Capricorni R. M.	349 . 0	3 . 14,7	17,2	17,5	18,5	17,3	19,8	6,084	+ 1 . 23,21	349 . 4 . 40,28	G.
	α^2 Capricorni	299 . 30	1 . 41,4	42,0	40,8	43,0	39,8	44,0			299 . 31 . 41,62	G.
	α Cygni R. M	46 . 45	2 . 17,5	19,4	18,4	20,7	15,0	21,9	9,147	+ 19,37	46 . 47 . 37,89	G.
	α Cygni...............	241 . 45	3 . 42,2	43,0	42,3	44,3	42,8	45,6			241 . 48 . 42,88	G.
	(d) ☽ S.L.	298 . 40	4 . 36,4	36,8	36,5	37,0	33,3	38,2		– 10,16	298 . 44 . 25,61	G.
	☽ S.L. M.	298 . 40	4 . 36,4	36,8	36,5	37,0	33,3	38,2	10,345	– 5,61 – 5,08	298 . 44 . 25,08	G.
	☽ S.L. M............	298 . 40	4 . 36,4	36,8	36,5	37,0	33,3	33,2	10,636	– 11,67	298 . 44 . 24,10	G.
	☽ S.L. M............	298 . 40	4 . 36,4	36,8	36,5	37,0	33,3	38,2	10,885	– 16,86 + 5,08	298 . 44 . 23,99	G.
	☽ S.L. M............	298 . 40	4 . 36,4	36,8	36,5	37,0	33,3	38,2	11,098	– 21,30 + 10,16	298 . 44 . 24,63	G.
	(e) Mars center.........	266 . 25	4 . 31,0	33,0	31,8	34,0	28,3	34,9		+ 1,71	266 . 29 . 33,29	G.
Oct. 21	⊙ N.L. M..........	297 . 0	3 . 10,5	11,5	11,0	13,8	5,6	12,7	12,460	– 49,69	297 . 2 . 20,74	G.
	(f) ⊙ S.L................	297 . 35	0 . 20,0	21,0	20,1	24,4	17,9	22,4	12,460	– 49,69	297 . 34 . 31,23	G.
	(g) Uranus................	298 . 25	0 . 56,4	57,1	57,2	58,8	53,4	61,3			298 . 25 . 57,25	C.
	(h) α Pegasi R. M......	16 . 25	1 . 14,9	17,6	14,9	18,0	14,4	18,9	11,188	– 23,17	16 . 25 . 53,11	G.
	α Pegasi	272 . 10	0 . 25,9	28,0	27,0	29,5	22,4	31,7			272 . 10 . 27,35	G.
	ψ^3 Aquarii...........	296 . 55	4 . 17,3	17,2	17,1	18,9	13,4	19,2			296 . 59 . 16,62	G.
	λ Draconis SP. R. M.	111 . 50	0 . 24,5	26,0	23,9	28,5	20,5	28,4	11,390	– 27,38	111 . 49 . 57,85	G.
	λ Draconis SP......	176 . 45	1 . 23,0	24,5	23,8	27,5	25,0	29,1			176 . 46 . 25,30	G.
	n Piscium............	290 . 5	4 . 40,2	41,4	39,4	41,0	38,4	41,5			290 . 9 . 39,70	G.
	(i) ☽ S.L................	292 . 25	0 . 15,7	16,4	15,6	18,9	11,8	20,8		– 10,42	292 . 25 . 6,08	G.
	☽ S.L. M.............	292 . 25	0 . 15,7	16,4	15,6	18,9	11,8	20,8	10,322	– 5,13 – 5,21	292 . 25 . 6,16	G.
	☽ S.L. M.............	292 . 25	0 . 15,7	16,4	15,6	18,9	11,8	20,8	10,592	– 10,76	292 . 25 . 5,74	G.
	☽ S.L. M.	292 . 25	0 . 15,7	16,4	15,6	18,9	11,8	20,8	10,851	– 16,16 + 5,21	292 . 25 . 5,55	G.
	☽ S.L. M.............	292 . 25	0 . 15,7	16,4	15,6	18,9	11,8	20,8	11,063	– 20,58 + 10,42	292 . 25 . 6,34	G.
	(j) α Andromedæ R.M.	30 . 15	1 . 20,0	21,1	18,1	22,6	19,8	24,8	7,590	+ 51,83 + 0,74	30 . 17 . 13,45	G.
	α Andromedæ.......	258 . 15	4 . 5,5	5,4	5,0	6,8	0,4	8,5		+ 1,96	258 . 19 . 6,69	G.

(a) At the 3d, 4th, and 5th wires. The 3d wire not good, the others pretty good.

(b) Ill-defined: shutters opened a few minutes.

(c) Better than usual.

(d) At the five wires. The 5th wire faint.

(e) At the 5th wire.

(f) Observed on the micrometer wire.

(g) Hurried: bisection doubtful.

(h) Very good.

(i) At the five wires.

(j) At the 4th and 5th wires.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
10,16	58 . 28 . 24,84	30,282	53,7	52,7	1 . 35,40				96 . 17 . 8,52	β Aquarii R.
	58 . 28 . 24,19								96 . 17 . 7,87	β Aquarii.
	69 . 34 . 2,09				2 . 36,26				107 . 23 . 46,63	γ Capricorni.
	69 . 2 . 14,60				2 . 32,02				106 . 51 . 54,90	δ Capricorni.
	70 . 15 . 41,97	30,300	53,5	51,9					106 . 54 . 42,84	☽.
	70 . 15 . 42,11				2 . 42,48	54 . 53,59		15 . 56,30	106 . 54 . 42,98	☽.
	70 . 15 . 42,06								106 . 54 . 42,93	☽.
10,76	− 36 . 12 . 46,25	30,330	51,2	49,2	43,34				1 . 33 . 38,69	Polaris R.
	− 36 . 12 . 45,70								1 . 33 . 39,24	Polaris.
	32 . 5 . 10,69	30,350	50,3	44,8	37,46	3,28			69 . 52 . 53,15	Mars.
	35 . 20 . 8,02		47,2	42,3	42,58	0,89	8,680	14,55	73 . 8 . 12,54	Jupiter.
	44 . 39 . 11,77	30,360	47,6	46,3	58,85	7,39	11,063	10,70	82 . 27 . 0,81	Venus.
9,74	− 39 . 19 . 58,65	30,368	51,0	51,5	48,33				− 1 . 33 . 38,70	Polaris SP. R.
	− 39 . 20 . 0,13								− 1 . 33 . 40,18	Polaris SP.
	62 . 54 . 55,87	29,374	51,5	52,7	1 . 54,65	7,65		16 . 5,90	100 . 27 . 45,25	☉.
	62 . 22 . 45,87				1 . 52,08	7,61			100 . 27 . 44,52	☉.
10,95	65 . 13 . 30,20	30,300	51,8	50,2	2 . 7,22				103 . 2 . 45,70	α^2 Capricorni R.
	65 . 13 . 31,14								103 . 2 . 46,64	α^2 Capricorni.
10,39	7 . 30 . 32,59				7,78				45 . 17 . 48,65	α Cygni R.
	7 . 30 . 32,40								45 . 17 . 48,46	α Cygni.
	64 . 26 . 15,13	30,286	49,5	47,1					101 . 7 . 22,62	☽.
	64 . 26 . 14,60								101 . 7 . 22,09	☽.
	64 . 26 . 13,62				2 . 3,52	52 . 14,39		15 . 49,92	101 . 7 . 21,11	☽.
	64 . 26 . 13,51								101 . 7 . 21,00	☽.
	64 . 26 . 14,15								101 . 7 . 21,64	☽.
	32 . 11 22,81	30,222	50,4	47,4	37,26	3,31			69 . 59 . 5,04	Mars.
	62 . 44 . 10,26	30,246	52,4	53,2	1 . 53,18	7,64		16 . 6,20	100 . 49 . 10,28	☉.
	63 . 16 . 20,75				1 . 55,80	7,68			100 . 49 . 10,95	☉.
	64 . 7 . 46,77	30,250	50,0	48,7	2 . 1,32	0,39			101 . 56 . 55,98	Uranus.
10,23	37 . 52 . 17,37				45,95				75 . 40 . 11,60	α Pegasi R.
	37 . 52 . 16,87								75 . 40 . 11,10	α Pegasi.
	62 . 41 . 6,14				1 . 53,98				100 . 30 . 8,40	ψ^3 Aquarii.
11,58	− 57 . 31 . 47,37				1 . 32,65				− 19 . 46 . 11,74	λ DraconisSP.R.
	− 57 . 31 . 45,18								− 19 . 46 . 9,55	λ Draconis SP.
	55 . 51 . 29,22		49,7	48,4	1 . 27,02				93 . 40 . 4,52	n Piscium.
	58 . 6 . 55,60								94 . 51 . 9,52	☽.
	58 . 6 . 55,68								94 . 51 . 9,60	☽.
	58 . 6 . 55,26				1 . 34,82	48 . 46,41		15 . 42,77	94 . 51 . 9,18	☽.
	58 . 6 . 55,07								94 . 51 . 8,99	☽.
	58 . 6 . 55,86								94 . 51 . 9,78	☽.
10,07	24 . 0 . 57,03				26,36				61 . 48 . 31,67	α Andromedæ R.
	24 . 0 . 56,21								61 . 48 . 30,85	α Andromedæ.

Coincidence of Micrometer Wire with fixed Wire = $10^r,076$. One revolution = 20″,843.
Correction for Runs = −2″,8. From Oct. 20. = −3″,9.
Adopted Zenith Point = 234°. 18′. 10″,48.
Assumed Co-latitude = 37°. 47′. 8″,28.
Runs taken Oct. 23. 22^h, and coincidence of wires found unaltered.
Oct. 18. 23^h. Molyneux fast on Hardy $2^m.35^s$.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Oct. 21	*t* Piscium …………	285 . 25	2 . 37,5	40,3	38,7	40,8	35,0	41,2			285 . 27 . 38,58	G.
	γ Cassiopeiæ R. M.	61 . 55	0 . 17,9	20,2	17,7	22,2	14,8	24,2	10,494	− 8,72	61 . 55 . 10,75	G.
	γ Cassiopeiæ………	226 . 40	1 . 10,0	10,8	11,0	12,7	9,4	14,1			226 . 41 . 11,18	G.
	(*a*) Polaris R. M…….	90 . 30	1 . 15,7	16,2	14,2	18,5	11,5	19,0	10,954	− 18,30	90 . 30 . 57,38	G.
	Polaris……………	198 . 5	0 . 25,8	24,8	22,7	28,0	20,7	30,5			198 . 5 . 25,37	G.
Oct. 22	⊙ S.L. M……….	297 . 55	2 . 11,8	12,8	13,0	14,2	6,9	14,8	14,220	− 1 . 26,36	297 . 55 . 45,61	G.
	⊙ N.L……………	297 . 20	3 . 35,2	37,2	35,8	37,8	34,0	38,6			297 . 23 . 35,97	G.
	n Piscium…………	290 . 5	4 . 38,9	41,0	38,4	40,7	39,8	41,9			290 . 9 . 39,52	G.
	α Andromedæ R. M……………	30 . 15	1 . 16,0	18,0	16,5	19,0	13,9	22,2	7,384	+ 56,12	30 . 17 . 13,55	G.
	α Andromedæ……	258 . 15	4 . 5,4	6,8	7,0	8,2	4,9	10,0			258 . 19 . 6,52	G.
	t Piscium …………	285 . 25	2 . 36,0	39,8	38,6	39,8	33,2	41,2			285 . 27 . 37,77	G.
	(*b*) ☽ S.L. ……………	285 . 55	2 . 6,0	7,9	7,0	7,8	1,5	10,0		− 10,36	285 . 56 . 56,07	G.
	☽ S.L. M…………	285 . 55	2 . 6,0	7,9	7,0	7,8	1,5	10,0	10,320	− 5,08 − 5,18	285 . 56 . 56,17	G.
	☽ S.L. M…………	285 . 55	2 . 6,0	7,9	7,0	7,8	1,5	10,0	10,498	− 8,80	285 . 56 . 57,63	G.
	☽ S.L. M…………	285 . 55	2 . 6,0	7,9	7,0	7,8	1,5	10,0	10,800	− 15,09 + 5,18	285 . 56 . 56,52	G.
	☽ S.L. M…………	285 . 55	2 . 6,0	7,9	7,0	7,8	1,5	10,0	10,998	− 19,22 + 10,36	285 . 56 . 57,57	G.
	(*c*) Polaris R. M…….	90 . 30	1 . 13,2	15,9	13,7	17,2	10,0	18,0	10,908	− 17,34	90 . 30 . 57,16	G.
	Polaris……………	198 . 5	0 . 22,2	22,0	19,3	24,5	16,7	27,3			198 . 5 . 21,95	G.
	δ Cassiopeiæ R. M.	61 . 25	3 . 23,2	27,1	23,2	27,7	24,2	29,4	10,280	− 4,25	61 . 28 . 21,10	G.
	δ Cassiopeiæ………	227 . 5	2 . 59,4	61,5	60,4	61,6	55,4	63,6			227 . 7 . 59,93	G.
Oct. 23	γ Cassiopeiæ R. M.	61 . 55	0 . 27,2	29,7	26,5	31,3	24,5	33,8	10,908	− 17,34	61 . 55 . 11,43	G.
	γ Cassiopeiæ………	226 . 40	1 . 8,0	10,0	9,3	11,2	9,4	12,9			226 . 41 . 9,98	G.
	(*d*) Polaris R. M…….	90 . 30	1 . 23,6	25,4	24,0	27,4	25,7	27,8	11,293	− 25,37	90 . 31 . 0,10	G.
	Polaris……………	198 . 5	0 . 20,5	21,5	20,0	24,8	18,3	27,0			198 . 5 . 21,98	G.
	(*b*) ☽ SL. ……………	279 . 35	4 . 0,4	2,3	2,4	4,2	2,0	5,6		− 9,98	279 . 38 . 52,30	G.
	☽ S.L. M…………	279 . 35	4 . 0,4	2,3	2,4	4,2	2,0	5,6	10,340	− 5,50 − 4,99	279 . 38 . 51,79	G.
	☽ S.L. M…………	279 . 35	4 . 0,4	2,3	2,4	4,2	2,0	5,6	10,552	− 9,93	279 . 38 . 52,35	G.
	☽ S.L. M…………	279 . 35	4 . 0,4	2,3	2,4	4,2	2,0	5,6	10,830	− 15,71 + 4,99	279 . 38 . 51,56	G.
	☽ S.L. M…………	279 . 35	4 . 0,4	2,3	2,4	4,2	2,0	5,6	11,050	− 20,30 + 9,98	279 . 38 . 51,96	G.
Oct. 25	α Arietis R. M……	24 . 45	1 . 17,5	20,0	16,8	20,8	18,3	23,3	7,417	+ 55,43	24 . 47 . 14,71	G.
	α Arietis…………	263 . 45	4 . 5,8	5,8	5,5	7,5	2,8	10,2			263 . 49 . 5,73	G.
Oct. 28	(*e*) α Cephei R. M……	63 . 55	4 . 15,8	16,0	18,4	17,9	18,2	17,9	10,530	− 9,23	63 . 59 . 8,29	G.
	α Cephei…………	224 . 35	2 . 17,4	16,8	18,1	18,8	16,6	18,3			224 . 37 . 17,75	G.
	β Aquarii R. M…	355 . 45	4 . 14,2	14,4	17,3	15,8	16,9	15,4	8,560	+ 31,83	355 . 49 . 47,65	G.
	β Aquarii…………	292 . 45	1 . 34,1	35,0	33,8	36,8	34,4	36,0			292 . 46 . 35,08	G.
	(*f*) β Cephei R. M……	71 . 55	1 . 18,7	18,1	19,2	20,4	16,5	19,7	11,139	− 21,92 0,00	71 . 55 . 56,90	G.
	β Cephei………. .	216 . 40	0 . 23,7	22,4	23,0	25,6	21,8	23,9		+ 6,13	216 . 40 . 29,53	G.
	υ Urs. Maj. SP. R. M……………	122 . 15	0 . 13,5	14,7	16,8	17,3	11,8	17,1	11,207	− 23,34	122 . 14 . 51,86	G.
	υ Ursæ Majoris SP.	166 . 20	1 . 32,7	34,0	34,0	35,7	35,8	35,6			166 . 21 . 34,68	G.
	Uranus ……………	298 . 25	2 . 35,5	35,3	35,5	37,7	34,0	36,0			298 . 27 . 35,77	G.

(*a*) All the observations of this evening satisfactory. The barometer and thermometer were very stationary.

(*b*) Not steady. At the five wires.

(*c*) Blur: not good.

(*d*) Unsatisfactory.

(*e*) Before this observation Mr Simms took out the object-glass and fixed the counterpoise. An ineffectual attempt had been made Sept. 19. to remedy the fault, by stuffing with wool the cones supposed to contain the shifting weight. This was now taken out, and the axis of the instrument cleaned.

(*f*) Not good: at the 5th wire and comb.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	51 . 9 . 28,10	30,250	49,4	48,0	1 . 13,40				88 . 57 . 49,78	*t* Piscium.
10,97	− 7 . 37 . 0,27				7,92				30 . 10 . 0,09	γ Cassiopeiæ R.
	− 7 . 36 . 59,30								30 . 10 . 1,06	γ Cassiopeiæ.
11,38	− 36 . 12 . 46,90				43,33				1 . 33 . 38,05	Polaris R.
	− 36 . 12 . 45,11								1 . 33 . 39,84	Polaris.
	63 . 37 . 35,13	30,328	51,2	52,1	1 . 58,18	7,70		16 . 6,50	101 . 10 . 27,39	☉.
	63 . 5 . 25,49				1 . 55,48	7,67			101 . 10 . 28,08	☉.
	55 . 51 . 29,04	30,312	49,7	48,0	1 . 27,27				93 . 40 . 4,59	*n* Piscium.
10,04	24 . 0 . 56,93				26,43				61 . 48 . 31,64	α Andromedæ R.
	24 . 0 . 56,04								61 . 48 . 30,75	α Andromedæ.
	51 . 9 . 27,29		49,2	47,5	1 . 13,62				88 . 57 . 49,19	*t* Piscium.
	51 . 38 . 45,59								88 . 26 . 56,34	☽.
	51 . 38 . 45,69								88 . 26 . 56,44	☽.
	51 . 38 . 47,15				1 . 14,92	44 . 37,87		15 . 34,58	88 . 26 . 57,90	☽.
	51 . 38 . 46,04								88 . 26 . 56,79	☽.
	51 . 38 . 47,09								88 . 26 . 57,84	☽.
9,56	− 36 . 12 . 46,68				43,46				1 . 33 . 38,14	Polaris R.
	− 36 . 12 . 48,53								1 . 33 . 36,29	Polaris.
10,52	− 7 . 10 . 10,62				7,47				30 . 36 . 50,19	δ Cassiopeiæ R.
	− 7 . 10 . 10,55								30 . 36 . 50,26	δ Cassiopeiæ.
10,71	− 7 . 37 . 0,95	30,272	50,7	49,7	7,90				30 . 9 . 59,43	γ Cassiopeiæ R.
	− 7 . 37 . 0,50								30 . 9 . 59,88	γ Cassiopeiæ.
11,04	− 36 . 12 . 49,62				43,22				1 . 33 . 35,44	Polaris R.
	− 36 . 12 . 48,50								1 . 33 . 36,56	Polaris.
	45 . 20 . 41,82	30,285	49,8	47,3					82 . 13 . 19,05	☽.
	45 . 20 . 41,31								82 . 13 . 18,54	☽.
	45 . 20 . 41,87				1 . 0,01	40 . 5,12		15 . 25,94	82 . 13 . 19,10	☽.
	45 . 20 . 41,08								82 . 13 . 18,31	☽.
	45 . 20 . 41,48								82 . 13 . 18,71	☽.
10,22	29 . 30 . 55,77	30,104	50,5	49,0	33,27				67 . 18 . 37,32	α Arietis R.
	29 . 30 . 55,25								67 . 18 . 36,80	α Arietis.
13,02	− 9 . 40 . 56,46	29,674	36,8	35,5	10,17				28 . 6 . 1,65	α Cephei R.
	− 9 . 40 . 54,08								28 . 6 . 4,03	α Cephei.
11,37	58 . 28 . 24,18				1 . 36,89				96 . 17 . 9,35	β Aquarii R.
	58 . 28 . 23,25								96 . 17 . 8,42	β Aquarii.
13,21	− 17 . 37 . 45,07				18,94				20 . 9 . 4,27	β Cephei R.
	− 17 . 37 . 42,30								20 . 9 . 7,04	β Cephei.
13,27	− 67 . 56 . 40,03				2 . 26,12				− 30 . 11 . 57,87	υ U. Maj. SP. R.
	− 67 . 56 . 37,15								− 30 . 11 . 54,99	υ Urs. Maj. SP.
	64 . 9 . 23,94	29,650	37,4		2 . 2,37	0,39			101 . 58 . 34,20	Uranus.

Coincidence of Micrometer Wire with fixed Wire = 10$^{\mathrm{r}}$,076. From Oct. 28. = 10$^{\mathrm{r}}$,087. One revolution = 20″,843.
Correction for Runs = − 3″,9. From Oct. 28. = + 1″,1.
Adopted Zenith Point = 234°. 18′. 10″,48. From Oct. 28. = 234°. 18′. 11″,83.
Assumed Co-latitude = 37°. 47′. 8″,28.
Runs and coincidence of wires taken Oct. 30. 22$^{\mathrm{h}}$.
Change of Zenith point on taking out the circle.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Oct. 29	α Cygni R. M.	46 . 45	2 . 24,3	24,5	24,8	27,4	19,4	26,8	9,360	+ 15,16	46 . 47 . 39,78	G.
	α Cygni	241 . 45	3 . 43,3	42,4	43,8	42,8	43,0	43,0			241 . 48 . 43,18	G.
	α Aquarii R. M.	0 . 55	4 . 19,6	19,4	23,0	19,8	23,3	19,4	7,888	+ 45,84	1 . 0 . 6,74	G.
	α Aquarii	287 . 35	1 . 17,2	16,0	16,7	19,2	10,8	16,7			287 . 36 . 16,15	G.
	Uranus	298 . 25	2 . 45,8	43,9	45,4	44,7	41,4	44,4			298 . 27 . 44,37	G.
Oct. 30	Jupiter S.L.	269 . 55	4 . 24,3	25,0	25,0	25,7	25,4	26,0			269 . 59 . 25,40	G.
	(*a*) Venus S.L.	282 . 55	1 . 58,3	58,4	61,0	58,9	52,4	57,4			282 . 56 . 57,80	G.
Oct. 31	⊙ N.L. M.	300 . 25	2 . 16,0	18,7	18,0	18,0	18,8	17,7	12,724	− 54,98	300 . 26 . 22,97	G.
	⊙ S.L.	300 . 55	3 . 33,3	35,8	36,0	34,7	36,3	34,2			300 . 58 . 35,18	G.
	α Cephei R. M.	63 . 55	4 . 19,3	19,7	21,0	20,4	19,0	19,7	10,654	− 11,82	63 . 59 . 8,18	G.
	α Cephei	224 . 35	2 . 12,8	14,1	13,5	14,6	14,7	13,8			224 . 37 . 14,00	G.
	β Aquarii R. M.	355 . 45	4 . 19,4	19,8	20,8	21,0	21,7	20,0	8,782	+ 27,19	355 . 49 . 47,79	G.
	β Aquarii	292 . 45	1 . 33,5	34,5	32,8	35,5	34,8	34,7			292 . 46 . 34,35	G.
	Uranus	298 . 25	3 . 2,4	2,8	3,7	2,7	3,7	1,1			298 . 28 . 2,85	G.
	α Andromedæ R. M.	30 . 15	1 . 14,8	13,3	13,8	14,1	12,2	15,6	7,095	+ 1 . 2,37	30 . 17 . 16,39	G.
	α Andromedæ	258 . 15	4 . 4,0	5,0	5,4	5,6	3,7	5,5			258 . 19 . 5,02	G.
Nov. 2	(*b*) Mars center	267 . 50	0 . 59,7	60,3	59,7	60,0	58,0	60,1		+ 1,69	267 . 51 . 1,41	G.
	Jupiter S.L.	270 . 0	4 . 7,5	9,1	8,0	9,0	6,5	8,9			270 . 4 . 8,48	G.
	Polaris SP. R. M.	93 . 35	4 . 9,5	8,0	9,4	9,8	8,0	7,5	13,088	− 1 . 2,61	93 . 38 . 6,41	G.
	Polaris SP.	194 . 55	3 . 19,8	20,0	18,0	20,8	19,2	20,0			194 . 58 . 19,88	G.
Nov. 3	Uranus	298 . 25	3 . 24,7	25,5	23,2	25,7	25,8	25,4			298 . 28 . 25,32	G.
	α Urs. Maj. SP. R. M.	119 . 25	1 . 17,5	18,4	16,6	19,0	18,2	18,8	12,288	− 45,94	119 . 25 . 32,24	G.
	α Ursæ Majoris SP.	169 . 10	0 . 49,0	49,6	48,3	50,8	51,2	50,3			169 . 10 . 49,93	G.
	Ceres	307 . 0	2 . 10,7	12,3	10,5	13,3	12,7	12,2			307 . 2 . 12,12	G.
	λ Draconis SP. R. M.	111 . 50	0 . 19,8	20,6	18,4	21,1	22,1	21,1	10,870	− 16,39	111 . 50 . 4,14	G.
	λ Draconis SP.	176 . 45	1 . 16,3	18,2	17,5	19,7	20,7	19,2			176 . 46 . 18,70	G.
	α Cassiopeiæ R. M.	57 . 40	3 . 20,0	21,0	18,6	20,5	19,8	21,4	8,400	+ 35,10	57 . 43 . 55,57	G.
	α Cassiopeiæ	230 . 50	2 . 29,3	28,6	26,2	28,7	28,3	29,8			230 . 52 . 28,68	G.
	γ Cassiopeiæ R. M.	61 . 55	0 . 33,8	36,0	32,0	36,3	36,2	36,4	11,030	− 19,72	61 . 55 . 15,45	G.
	γ Cassiopeiæ	226 . 40	1 . 7,8	9,0	8,0	9,0	9,6	9,2			226 . 41 . 8,85	G.
	Polaris R. M.	90 . 30	1 . 18,5	19,0	17,7	20,5	19,0	19,7	10,750	− 13,89	90 . 31 . 5,28	G.
	Polaris	198 . 5	0 . 18,9	18,2	16,0	20,7	18,3	21,1			198 . 5 . 18,88	G.
	Mars N.L.	267 . 55	2 . 7,9	9,0	8,4	8,6	8,6	8,8			267 . 57 . 8,72	G.
	(*c*) Jupiter N.L.	270 . 0	4 . 59,8	61,4	60,0	62,8	60,3	61,6			270 . 5 . 0,98	G.
Nov. 5	⊙ N.L. M.	302 . 0	2 . 12,8	12,3	11,0	13,9	11,0	12,9	15,275	− 1 . 48,20	302 . 0 . 24,28	G.
	⊙ S.L.	302 . 30	2 . 40,4	42,0	39,9	41,8	39,5	39,8			302 . 32 . 40,77	G.
	π^2 Urs. Maj. SP. R. M.	117 . 10	1 . 21,1	20,0	18,7	22,0	20,8	21,1	13,351	− 1 . 8,10	117 . 10 . 12,62	G.
	π^2 Urs. Maj. SP.	171 . 25	1 . 12,0	11,0	10,8	11,9	12,1	12,1			171 . 26 . 11,75	G.
	α Cygni R. M.	46 . 45	2 . 16,8	15,1	14,0	16,4	15,4	15,8	8,910	+ 24,46	46 . 47 . 40,23	G.
	α Cygni	241 . 45	3 . 44,1	43,8	42,3	43,8	44,8	43,7			241 . 48 . 44,03	G.
	Ceres	306 . 50	2 . 8,4	7,3	7,9	9,8	7,0	8,6			306 . 52 . 8,33	G.
	α Andromedæ R. M.	30 . 15	1 . 19,0	17,7	16,3	18,3	16,9	19,4	7,230	+ 59,48	30 . 17 . 17,51	G.
	α Andromedæ	258 . 15	4 . 7,7	5,7	5,8	6,3	5,8	7,4			258 . 19 . 6,77	G.
	Polaris R. M.	90 . 30	1 . 10,8	10,8	9,4	12,6	9,7	10,4	10,275	− 3,98	90 . 31 . 6,74	G.
	Polaris	198 . 5	0 . 19,1	16,4	15,5	19,5	17,2	20,3			198 . 5 . 18,02	G.

(*a*) Very badly defined.
(*b*) At the 5th wire.

(*c*) No correction for runs.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
11,48	7 . 30 . 32,05	29,678	35,4	31,5	7,92				45 . 17 . 48,25	α Cygni R.
	7 . 30 . 31,35								45 . 17 . 47,55	α Cygni.
11,45	53 . 18 . 5,09	29,694	32,0	29,3	1 . 20,92				91 . 6 . 34,29	α Aquarii R.
	53 . 18 . 4,32								91 . 6 . 33,52	α Aquarii.
	64 . 9 . 32,54				2 . 4,19	0,39			101 . 58 . 44,62	Uranus.
	35 . 41 . 13,57	29,950	33,3	30,5	43,64	0,93	11,850	18,37	73 . 28 . 46,19	Jupiter.
	48 . 38 . 45,97	29,980	32,4	31,6	1 . 8,89	7,17	10,972	9,64	86 . 26 . 46,33	Venus.
	66 . 8 . 11,14	30,000	36,0	36,6	2 . 15,16	7,88		16 . 8,80	104 . 13 . 35,50	⊙.
	66 . 40 . 23,35				2 . 18,61	7,92			104 . 13 . 33,52	⊙.
11,09	- 9 . 40 . 56,35	30,028	35,3	34,5	10,31				28 . 6 . 1,62	α Cephei R.
	- 9 . 40 . 57,83								28 . 6 . 0,14	α Cephei.
11,07	58 . 28 . 24,04				1 . 38,25				96 . 17 . 10,57	β Aquarii R.
	58 . 28 . 22,52								96 . 17 . 9,05	β Aquarii.
	64 . 9 . 51,02			34,0	2 . 4,37	0,39			101 . 59 . 3,28	Uranus.
10,71	24 . 0 . 55,44		34,4	33,2	27,00				61 . 48 . 30,72	α AndromedæR.
	24 . 0 . 53,19								61 . 48 . 28,47	α Andromedæ.
	33 . 32 . 49,58	29,750	40,8	39,4	39,29	3,72			71 . 20 . 33,43	Mars.
	35 . 45 . 56,65			38,8	42,73	0,94	11,815	18,04	73 . 33 . 28,68	Jupiter.
13,15	- 39 . 19 . 54,58	29,680	43,3	44,1	47,96				- 1 . 33 . 34,26	Polaris SP. R.
	- 39 . 19 . 51,95								- 1 . 33 . 31,63	Polaris SP.
	64 . 10 . 13,49	29,486	45,4	45,0	1 . 59,40	0,39			101 . 59 . 20,78	Uranus.
11,09	- 65 . 7 . 20,41				2 . 4,58				- 27 . 22 . 16,71	α U. Maj. SP. R.
	- 65 . 7 . 21,90								- 27 . 22 . 18,20	α Urs. Maj. SP.
	72 . 44 . 0,29				3 . 4,65	3,43			110 . 34 . 9,79	Ceres.
11,42	- 57 . 31 . 52,31		44,6	44,4	1 . 31,13				- 19 . 46 . 15,16	λ Draconis SP. R.
	- 57 . 31 . 53,13								- 19 . 46 . 15,98	λ Draconis SP.
12,13	- 3 . 25 . 43,74		44,0	43,6	3,49				34 . 21 . 21,05	α Cassiopeiæ R.
	- 3 . 25 . 43,15								34 . 21 . 21,64	α Cassiopeiæ.
12,15	- 7 . 37 . 3,62				7,79				30 . 9 . 56,87	γ Cassiopeiæ R.
	- 7 . 37 . 2,98								30 . 9 . 57,51	γ Cassiopeiæ.
12,08	- 36 . 12 . 53,45				42,63				1 . 33 . 32,20	Polaris R.
	- 36 . 12 . 52,95								1 . 33 . 32,70	Polaris.
	33 . 38 . 56,89	29,442	42,5	41,2	38,89	3,75	9,677	4,25	71 . 26 . 44,56	Mars.
	35 . 46 . 49,15				42,10	0,94	8,325	18,33	73 . 34 . 56,92	Jupiter.
	67 . 42 . 12,45	29,060	43,4	43,0	2 . 19,23	7,99		16 . 9,90	105 . 47 . 41,87	⊙.
	68 . 14 . 28,94				2 . 22,98	8,02			105 . 47 . 42,28	⊙.
12,19	- 62 . 52 . 0,79	29,170	42,4	40,9	1 . 52,58				- 25 . 6 . 45,09	π^2 U. Maj. SP. R.
	- 62 . 52 . 0,08								- 25 . 6 . 44,38	π^2 Urs. Maj. SP.
12,13	7 . 30 . 31,60				7,64				45 . 17 . 47,52	α Cygni R.
	7 . 30 . 32,20								45 . 17 . 48,12	α Cygni.
	72 . 33 . 56,50	29,218	39,5	38,7	3 . 3,56	3,39			110 . 24 . 4,95	Ceres.
12,14	24 . 0 . 54,32	29,230	39,2	38,3	26,01				61 . 48 . 28,61	α AndromedæR.
	24 . 0 . 54,94								61 . 48 . 29,23	α Andromedæ.
12,38	- 36 . 12 . 54,91	29,238	38,8		42,74				1 . 33 . 30,63	Polaris R.
	- 36 . 12 . 53,81								1 . 33 . 31,73	Polaris.

Coincidence of Micrometer Wire with fixed Wire = 10^r,087. From Nov. 2. = 10^r,084. One revolution = 20″,843.
Correction for Runs = + 1″,1. From Nov. 2. = + 2″,3.
Adopted Zenith Point = 234° . 18′ . 11″,83.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Runs and coincidence of wires taken Nov. 6. 22^h.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Nov. 6	(*a*) Mars S.L.	268 . 15	0 . 34,4	34,7	33,3	35,1	33,6	35,8		+ 1,69	268 . 15 . 36,22	G.
	Jupiter S.L.	270 . 5	4 . 46,1	46,2	45,7	45,7	44,9	45,0			270 . 9 . 45,97	G.
	Venus S.L.	285 . 45	0 . 22,2	21,7	21,3	23,2	19,8	22,8			285 . 45 . 21,87	G.
	Polaris SP. R. M.	93 . 35	4 . 9,0	7,4	9,4	8,9	7,8	7,5	13,195	- 1 . 4,84	93 . 38 . 3,81	G.
	Polaris SP.	194 . 55	3 . 22,1	19,4	21,0	20,9	20,0	21,7			194 . 58 . 21,12	G.
	Mercury center	294 . 30	0 . 10,7	8,8	10,7	11,3	8,1	9,8			294 . 30 . 9,92	G.
	Arcturus R. M.	22 . 5	3 . 32,7	32,0	31,4	31,9	32,4	33,8	11,263	- 24,57	22 . 8 . 8,06	G.
	Arcturus	266 . 25	3 . 14,9	14,3	14,8	15,4	13,0	14,9			266 . 28 . 14,80	G.
Nov. 7	(*b*) ⊙ N.L. M.	302 . 35	3 . 16,6	15,9	15,9	17,2	15,7	15,7	16,153	- 2 . 6,50	302 . 36 . 9,92	G.
	⊙ S.L.	303 . 5	3 . 26,0	26,4	24,7	26,5	25,0	25,5			303 . 8 . 25,95	G.
	α Cephei R. M.	63 . 55	4 . 16,3	17,3	15,9	17,0	15,3	16,6	10,488	- 8,42	63 . 59 . 8,31	G.
	α Cephei	224 . 35	2 . 16,1	14,4	13,0	15,4	12,7	15,4			224 . 37 . 14,68	G.
	β Aquarii R. M.	355 . 45	4 . 15,2	14,8	15,0	15,8	14,0	14,5	8,560	+ 31,76	355 . 49 . 46,98	G.
	β Aquarii	292 . 45	1 . 38,0	37,0	35,4	37,9	34,7	37,1			292 . 46 . 36,80	G.
	β Cephei R. M.	71 . 55	1 . 18,3	17,4	17,0	19,1	16,2	17,8	10,990	- 18,89	71 . 55 . 58,84	G.
	β Cephei	216 . 40	0 . 27,3	25,0	25,1	27,1	23,2	26,9			216 . 40 . 25,80	G.
	Uranus	298 . 25	3 . 32,0	32,0	30,0	31,9	28,4	31,4			298 . 28 . 31,22	G.
	α Urs. Maj. SP. R. M.	119 . 25	1 . 15,6	16,2	14,7	18,0	12,7	17,2	12,300	- 46,20	119 . 25 . 29,63	G.
	α Urs. Maj. SP.	169 . 10	0 . 55,0	54,1	54,1	55,3	52,4	55,9			169 . 10 . 54,53	G.
	Ceres	306 . 40	1 . 46,0	44,9	45,0	47,3	44,1	45,5			306 . 41 . 45,60	G.
	(*c*) α Andromedæ R. M.	30 . 15	1 . 17,6	16,4	15,4	17,0	13,0	18,8	7,285	+ 58,35 + 0,74	30 . 17 . 15,56	G.
	α Andromedæ	258 . 15	4 . 4,0	3,5	3,0	3,0	0,0	4,7		+ 1,96	258 . 19 . 5,31	G.
	(*d*) Mars N.L.	268 . 20	1 . 24,9	25,5	25,3	26,5	22,4	28,2		+ 1,69	268 . 21 . 27,26	G.
	(*e*) Jupiter N.L.	270 . 10	0 . 25,2	24,0	24,8	26,3	20,8	25,9			270 . 10 . 24,53	G.
	Polaris SP. R. M.	93 . 35	4 . 12,8	10,9	12,7	12,6	10,8	10,8	13,449	- 1 . 10,13	93 . 38 . 1,95	G.
	Polaris SP.	194 . 55	3 . 24,2	21,7	22,2	23,0	21,2	24,1			194 . 58 . 23,00	G.
	(*f*) Mercury center	294 . 50	4 . 12,0	10,8	11,8	12,1	11,0	10,4			294 . 54 . 11,67	G.
	Arcturus R. M.	22 . 5	5 . 15,9	14,6	14,5	14,9	13,6	16,9	10,404	- 6,67	22 . 8 . 8,65	G.
	Arcturus	266 . 25	3 . 15,0	13,8	14,0	14,3	13,3	14,6			266 . 28 . 14,42	G.
Nov. 8	⊙ S.L. M.	303 . 25	2 . 10,2	12,0	11,2	11,9	10,4	11,6	13,800	- 1 . 17,46	303 . 25 . 53,92	G.
	⊙ N.L.	302 . 50	3 . 34,2	35,9	34,0	34,4	33,8	33,8			302 . 53 . 34,63	G.
	(*g*) β Aquarii R. M.	355 . 45	4 . 14,4	14,4	15,5	15,6	15,4	15,0	8,537	+ 32,24	355 . 49 . 47,62	G.
	β Aquarii	292 . 45	1 . 33,8	33,0	32,3	34,5	32,8	35,4			292 . 46 . 33,75	G.
	β Cephei R. M.	71 . 55	1 16,1	14,5	16,5	17,6	15,4	16,0	10,927	- 17,56	71 . 55 . 58,56	G.
	(*h*) β Cephei	216 . 40	0 . 27,0	25,0	24,1	27,3	25,3	27,3		+ 1,23	216 . 40 . 27,26	G.
	Uranus	298 . 25	3 . 28,7	27,0	27,8	27,5	27,3	28,8			298 . 28 . 28,12	G.
	Ceres	306 . 35	1 . 22,7	20,3	20,8	24,5	20,4	24,0			306 . 36 . 22,22	G.
	(*i*) γ Urs. Maj. SP. R. M.	127 . 25	3 . 16,0	16,6	15,7	17,7	16,2	16,7	16,628	- 2 . 16,39	127 . 26 . 0,34	G.
	γ Ursæ Majoris SP.	161 . 10	0 . 23,6	24,4	22,4	26,4	24,4	26,7			161 . 10 . 24,68	G.
	(*j*) α Andromedæ R. M.	30 . 15	1 . 19,8	19,4	20,0	20,5	19,4	22,6	7,348	+ 57,04	30 . 17 . 17,42	G.
	α Andromedæ	258 . 15	4 . 4,4	4,0	4,4	4,7	3,3	5,2			258 . 19 . 4,65	G.
Nov. 9	(*k*) ⊙ N.L. M.	303 . 10	2 . 14,9	15,1	14,0	17,2	12,0	16,4	14,110	- 1 . 23,92	303 . 10 . 51,20	G.
	⊙ S.L.	303 . 40	3 . 5,4	7,4	5,4	8,3	3,0	7,0			303 . 43 . 6,32	G.
	(*l*) Venus S.L.	287 . 0	0 .		5,2	9,8	5,4	8,1			287 . 0 . 7,13	G.
	Polaris SP. R. M.	93 . 35	4 .		9,3	12,2	8,4	10,1	13,225	- 1 . 5,46	93 . 38 . 4,62	G.
	Polaris SP.	194 . 55	3 .		18,2	20,7	20,4	20,8			194 . 58 . 20,08	G.
	Mercury center	295 . 45	3 .		52,7	55,8	53,7	53,0			295 . 48 . 53,85	G.

(*a*) At the 5th wire.
(*b*) Not good.
(*c*) At the 4th and 5th wires. The mercury waved very much.
(*d*) At the 5th wire: not sufficiently distinct.
(*e*) Badly defined and dancing.
(*f*) Faint.
(*g*) The mercury much disturbed by the wind.
(*h*) At the 4th wire.
(*i*) Not good: the Zenith distance rather too great for the reflection observation.
(*j*) Too much wind.
(*k*) Shutters just opened.
(*l*) The screw of Microscope B would not turn.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	33 . 57 . 24,39	29,438	38,8	36,2	39,74	3,86	10,510	4,45	71 . 45 . 4,10	Mars.
	35 . 51 . 34,14				42,66	0,95	11,860	18,51	73 . 39 . 5,62	Jupiter.
	51 . 27 . 10,04	29,506	37,7	36,4	1 . 14,12	7,07	10,970	9,66	89 . 15 . 15,71	Venus.
12,47	– 39 . 19 . 51,98	29,522	38,3	38,0	48,31				– 1 . 33 . 32,01	Polaris SP. R.
	– 39 . 19 . 50,71								– 1 . 33 . 30,74	Polaris SP.
	60 . 11 . 58,09	29,538	39,2	39,7	1 . 42,37	7,36			98 . 0 . 41,38	Mercury.
11,43	32 . 10 . 3,77	29,550	39,8	40,3	36,96				69 . 57 . 49,01	Arcturus R.
	32 . 10 . 2,97								69 . 57 . 48,21	Arcturus.
	68 . 17 . 58,09	29,558	40,7	41,4	2 . 26,35	8,02		16 . 10,40	106 . 23 . 35,10	⊙.
	68 . 50 . 14,12				2 . 30,39	8,05			106 . 23 . 34,34	⊙.
11,50	– 9 . 40 . 56,48	29,660	39,8	38,7	10,10				28 . 6 . 1,70	α Cephei R.
	– 9 . 40 . 57,15								28 . 6 . 1,03	α Cephei.
11,89	58 . 28 . 24,85				1 . 36,19				96 . 17 . 9,32	β Aquarii R.
	58 . 28 . 24,97								96 . 17 . 9,44	β Aquarii.
12,32	– 17 . 37 . 47,01				18,81				20 . 9 . 2,46	β Cephei R.
	– 17 . 37 . 46,03								20 . 9 . 3,44	β Cephei.
	64 . 10 . 19,39	29,668	38,8	37,4	2 . 2,05	0,39			101 . 59 . 29,33	Uranus.
12,08	– 65 . 7 . 17,80	29,674	38,0	36,7	2 . 7,55				– 27 . 22 . 17,07	α U. Maj. SP. R.
	– 65 . 7 . 17,30								– 27 . 22 . 16,57	α Urs. Maj. SP.
	72 . 23 . 33,77				3 . 5,27	3,35			110 . 13 . 43,97	Ceres.
10,44	24 . 0 . 56,27	29,695	36,8	35,2	26,59				61 . 48 . 31,14	α AndromedæR.
	24 . 0 . 53,48								61 . 48 . 28,75	α Andromedæ.
	34 . 3 . 15,43	29,818	37,0	33,0	40,67	3,89	9,654	4,49	71 . 51 . 4,98	Mars.
	35 . 52 . 12,70				43,51	0,96	8,286	18,74	73 . 40 . 22,27	Jupiter.
12,48	– 39 . 19 . 50,12	29,892	36,3	36,4	49,08				– 1 . 33 . 30,92	Polaris SP. R.
	– 39 . 19 . 48,83								– 1 . 33 . 29,63	Polaris SP.
	60 . 35 . 59,84	29,916	37,5	38,4	1 . 45,65	7,20			98 . 24 . 46,57	Mercury.
11,54	32 . 10 . 3,18		38,0	39,4	37,49				69 . 57 . 48,95	Arcturus R.
	32 . 10 . 2,59								69 . 57 . 48,36	Arcturus.
	69 . 7 . 42,09	29,928	38,8	41,1	2 . 34,68	8,07		16 . 10,60	106 . 41 . 6,38	⊙.
	68 . 35 . 22,80				2 . 30,48	8,04			106 . 41 . 4,12	⊙.
10,69	58 . 28 . 24,21	29,990	38,0	35,7	1 . 37,87				96 . 17 . 10,36	β Aquarii R.
	58 . 28 . 21,92								96 . 17 . 8,07	β Aquarii.
12,91	– 17 . 37 . 46,73				19,14				20 . 9 . 2,41	β Cephei R.
	– 17 . 37 . 44,57								20 . 9 . 4,57	β Cephei.
	64 . 10 . 16,29		37,2	35,1	2 . 3,96	0,39			101 . 59 . 28,14	Uranus.
	72 . 18 . 10,39		36,4	34,0	3 . 7,32	3,33			110 . 8 . 22,66	Ceres.
12,51	– 73 . 7 . 48,51		35,8	33,8	3 . 16,97				– 35 . 23 . 57,20	γ U. Maj. SP. R.
	– 73 . 7 . 47,15								– 35 . 23 . 55,84	γ Urs. Maj. SP.
11,04	24 . 0 . 54,41				26,93				61 . 48 . 29,62	α AndromedæR.
	24 . 0 . 52,82								61 . 48 . 28,03	α Andromedæ.
	68 . 52 . 39,37	29,850	42,5	46,0	2 . 30,76	8,06		16 . 10,90	106 . 58 . 21,25	⊙.
	69 . 24 . 54,49				2 . 35,00	8,09			106 . 58 . 18,78	⊙.
	52 . 41 . 55,30	29,498	48,5	49,6	1 . 15,41	7,04	10,912	9,03	90 . 30 . 2,92	Venus.
12,35	– 39 . 19 . 52,79				47,14				– 1 . 33 . 31,65	Polaris SP. R.
	– 39 . 19 . 51,75								– 1 . 33 . 30,61	Polaris SP.
	61 . 30 . 42,02	29,518	50,4	50,7	1 . 45,48	6,94			99 . 19 . 28,84	Mercury.

Coincidence of Micrometer Wire with fixed Wire = $10^{r},084$. One revolution = 20″,843.
Correction for Runs = + 2″,3. From Venus Nov. 9. = + 0″,3.
Adopted Zenith Point = 234° . 18′ . 11″,83.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Runs taken Nov. 10. 22^{h}.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Nov. 10	⊙ S.L. M.	304. 0	1.		16,2	21,4	17,2	20,5	13,583	−1.12,94	304. 0. 5,89	G.
	⊙ N.L.	303.25	2.		44,4	49,2	46,3	48,0			303.27.47,03	G.
	Ceres....................	306.25	0.		14,8	20,6	18,0	20,0			306.25.18,35	G.
	α Cassiopeiæ R. M.	57.40	3.		36,0	38,5	37,8	39,0	9,158	+19,31	57.43.57,19	G.
	α Cassiopeiæ.........	230.50	2.		24,2	27,4	26,0	27,8			230.52.26,38	G.
	Polaris R. M.	90.30	1.		19,3	21,8	20,8	21,7	10,736	−13,59	90.31. 7,31	G.
	Polaris.................	198. 5	0.		13,0	18,8	16,8	19,1			198. 5.16,93	G.
	(a) δ Cassiopeiæ R. M.	61.25	3.		22,7	25,8	25,5	26,5	10,030	+1,12	61.28.26,30	G.
	(b) δ Cassiopeiæ.........	227. 5	2.		55,0	58,0	57,8	57,2		+1,07	227. 7.58,12	G.
	(c) α Draconis SP. R. M.	116.55	0.		9,0	12,5	9,0	10,0	13,280	−1. 6,62	116.54. 3,51	G.
	α Draconis SP......	171.40	2.		18,0	21,0	21,0	20,7			171.42.20,20	G.
Nov. 12	(d) α Urs. Maj. SP. R. M.	119.25	1.18,4	18,4	16,0	20,0	16,3	19,2	12,254	−45,23	119.25.32,94	G.
	α Urs. Maj. SP.	169.10	0.50,9	50,8	48,7	53,0	50,8	50,5			169.10.50,85	G.
	(e) Polaris R. M.	90.30	1.19,4	20,7	19,5	21,5	18,7	20,1	10,637	−11,52	90.31. 8,58	G.
	Polaris...............	198. 5	0.15,3	15,0	13,0	16,8	14,5	16,7			198. 5.15,25	G.
Nov. 13	(f) Venus S.L.	288.40	1.23,2	21,4	20,4	23,4	18,0	23,5			288.41.21,78	G.
	Polaris SP. R. M...	93.35	4.13,9	12,8	12,2	13,8	10.3	12,4	13,523	−1.11,69	93.38. 1,28	G.
	Polaris SP...........	194.55	3.25,4	22,6	21,7	24,3	21,0	25,4			194.58.23,72	G.
	(g) Mercury center.....	297.50	4.55,0	55,2	53,2	55,0	53,7	54,0			297.54.54,80	G.
Nov. 14	⊙ S.L. M.	305. 5	1.18,0	17,0	16,3	18,8	15,4	17,3	14,660	−1.35,38	305. 4.41,87	G.
	⊙ N.L.	304.30	2.21,7	23,0	20,8	23,1	20,0	22,2			304.32.22,02	G.
	α Aquilæ R. M.	10.30	3.12,4	14,5	10,2	12,3	8,8	13,0	11,053	−20,20	10.32.51,97	G.
	α Aquilæ............	278. 0	3.34,5	35,4	30,0	34,0	30,7	33,5			278. 3.33,35	G.
	(h) β Aquilæ R. M.....	8. 5	1.12,2	14,5	9,8	13,8	8,3	13,2	8,950	+23,63	8. 6.35,71	G.
	β Aquilæ............	280.25	4.46,3	48,2	45,4	46,5	44,4	46,0			280.29.46,58	G.
	σ Capricorni.........	306. 5	0.34,8	34,9	30,9	34,8	31,0	36,5			306. 5.33,87	G.
	ψ Capricorni........	312.15	2.53,2	53,7	50,3	53,1	49,5	52,8			312.17.52,37	G.
	(i) ☽ S.L.................	310.45	1.51,4	51,0	48,8	51,0	47,0	50,4		−7,58	310.46.42,52	G.
	☽ S.L. M............	310.45	1.51,4	51,0	48,8	51,0	47,0	50,4	10,238	−3,20 −3,79	310.46.43,11	G.
	☽ S.L. M............	310.45	1.51,4	51,0	48,8	51,0	47,0	50,4	10,447	−7,56	310.46.42,54	G.
	☽ S.L. M............	310.45	1.51,4	51,0	48,8	51,0	47,0	50,4	10,630	−11,38 +3,79	310.46.42,51	G.
	☽ S.L. M............	310.45	1.51,4	51,0	48,8	51,0	47,0	50,4	10,838	−15,71 +7,58	310.46.41,97	G.
	α Cephei R. M......	63.55	4.18,5	20,8	16,0	18,2	15,3	18,0	10,520	−9,10	63.59. 9,10	G.
	α Cephei	224.35	2.18,3	17,8	13,2	16,5	12,3	16,5			224.37.15,98	G.
	ζ Capricorni.........	309.30	4.21,5	22,1	19,7	21,0	17,2	20,1			309.34.20,67	G.
	β Aquarii R. M. ...	355.45	4.12,4	14,1	11,8	12,4	10,4	11,2	8,492	+33,18	355.49.45,63	G.
	β Aquarii............	292.45	1.38,3	39,0	35,0	38,4	33,1	37,8			292.46.37,08	G.
	ε Capricorni.........	306.35	4.44,2	44,4	42,8	43,9	40,7	43,3			306.39.43,65	G.
	Uranus	298.25	3. 8,4	8,8	6,2	6,5	3,7	7,2			298.28. 7,08	G.
	Ceres.................	306. 0	1.30,4	29,2	25,7	29,5	25,0	30,0			306. 1.28,43	G.
	p Piscium	290.55	2.14,1	15,8	12,7	14,4	9,4	13,5			290.57.13,52	G.
	s Piscium............	293. 5	1.41,5	42,0	37,9	40,4	36,1	40,0			293. 6.39,82	G.
	δ Piscium...........	279.45	3.16,0	17,5	15,5	16,3	10,8	15,3			279.48.15,55	G.
	m Ceti	288.30	1.35,0	34,8	31,9	35,0	29,4	33,5			288.31.33,42	G.
	Polaris R. M.	90.30	1.20,8	20,8	17,7	20,2	14,4	19,3	10,581	−10,37	90.31. 8,61	G.
	Polaris..............	198. 5	0.18,0	17,1	14,0	17,7	12,5	18,0			198. 5.16,25	G.
	Venus S.L.	289. 5	1.54,8	54,1	53,3	53,0	48,4	51,5			289. 6.52,70	G.

(a) Too near the fixed wire to be good.
(b) At the 4th wire.
(c) Faint.
(d) Microscope B cleaned and put up again, but not completely rectified.
(e) Too cloudy.
(f) Not good.
(g) Exceedingly faint.
(h) The mercury waving.
(i) At the five wires,

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	69 . 41 . 54,06	29,522	51,5	52,1	2 . 33,62	8,11		16 . 11,10	107 . 15 . 16,75	⊙.
	69 . 9 . 35,20				2 . 29,36	8,08			107 . 15 . 15,86	⊙.
	72 . 7 . 6,52	29,532	47,0	45,4	2 . 58,15	3,29			109 . 57 . 9,66	Ceres.
11,79	− 3 . 25 . 45,36		43,8	42,0	3,51				34 . 21 . 19,41	*α* Cassiopeiæ R.
	− 3 . 25 . 45,45								34 . 21 . 19,32	*α* Cassiopeiæ.
12,12	− 36 . 12 . 55,48				42,84				1 . 33 . 29,96	Polaris R.
	− 36 . 12 . 54,90								1 . 33 . 30,54	Polaris.
12,21	− 7 . 10 . 14,47				7,36				30 . 36 . 46,45	*δ* Cassiopeiæ R.
	− 7 . 10 . 13,71								30 . 36 . 47,21	*δ* Cassiopeiæ.
11,86	− 62 . 35 . 51,68	29,512	43,4	42,2	1 . 52,31				− 24 . 50 . 35,71	*α* Draconis SP. R.
	− 62 . 35 . 51,63								− 24 . 50 . 35,66	*α* Draconis SP.
11,90	− 65 . 7 . 21,11	29,728	43,7	43,1	2 . 6,09				− 27 . 22 . 18,92	*α* U. Maj. SP. R.
	− 65 . 7 . 20,98								− 27 . 22 . 18,79	*α* Urs. Maj. SP.
11,92	− 36 . 12 . 56,75	29,700	44,5	44,2	42,89				1 . 33 . 28,64	Polaris R.
	− 36 . 12 . 56,58								1 . 33 . 28,81	Polaris.
	54 . 23 . 9,95	29,520	43,4	42,5	1 . 21,42	6,99	10,848	8,32	92 . 11 . 24,34	Venus.
12,50	− 39 . 19 . 49,45			43,3	47,78				− 1 . 33 . 28,95	Polaris SP. R.
	− 39 . 19 . 48,11								− 1 . 33 . 27,61	Polaris SP.
	63 . 36 . 42,97	29,548	44,8	45,3	1 . 56,69	6,53			101 . 25 . 41,41	Mercury.
	70 . 46 . 30,04	29,552	45,8	46,7	2 . 44,78	8,17		16 . 12,00	108 . 20 . 2,93	⊙.
	70 . 14 . 10,19				2 . 40,02	8,14			108 . 20 . 2,35	⊙.
12,66	43 . 45 . 19,86	29,590	44,5	44,0	55,87				81 . 33 . 24,01	*α* Aquilæ R.
	43 . 45 . 21,52								81 . 33 . 25,67	*α* Aquilæ.
11,15	46 . 11 . 36,12				1 . 0,82				83 . 59 . 45,22	*β* Aquilæ R.
	46 . 11 . 34,75								83 . 59 . 43,85	*β* Aquilæ.
	71 . 47 . 22,04				2 . 55,66				109 . 37 . 25,98	*σ* Capricorni.
	77 . 59 . 40,54			42,3	4 . 28,84				115 . 51 . 17,66	*ψ* Capricorni.
	76 . 28 . 30,69	29,600	43,5	40,7					113 . 6 . 0,16	☽.
	76 . 28 . 31,28								113 . 6 . 0,75	☽.
	76 . 28 . 30,71				3 . 59,85	57 . 29,39		16 . 9,27	113 . 6 . 0,18	☽.
	76 . 28 . 30,68								113 . 6 . 0,15	☽.
	76 . 28 . 30,14								113 . 5 . 59,61	☽.
12,54	− 9 . 40 . 57,27				10,03				28 . 6 . 0,98	*α* Cephei R.
	− 9 . 40 . 55,85								28 . 6 . 2,40	*α* Cephei.
	75 . 16 . 8,84				3 . 40,07				113 . 6 . 57,19	*ζ* Capricorni.
11,36	58 . 28 . 26,20		42,8	40,4	1 . 35,65				96 . 17 . 10,13	*β* Aquarii R.
	58 . 28 . 25,25								96 . 17 . 9,18	*β* Aquarii.
	72 . 21 . 31,82				3 . 2,99				110 . 11 . 43,09	*ε* Capricorni.
	64 . 9 . 55,25	29,628	42,4	40,8	2 . 0,98	0,39			101 . 59 . 4,12	Uranus.
	71 . 43 . 16,60		41,2	39,8	2 . 56,73	3,22			109 . 33 . 18,39	Ceres.
	56 . 39 . 1,69	29,646	41,3		1 . 29,45				94 . 27 . 39,42	*p* Piscium.
	58 . 48 . 27,99				1 . 37,18				96 . 37 . 13,45	*s* Piscium.
	45 . 30 . 3,72	29,662	41,0		1 . 0,03				83 . 18 . 12,03	*δ* Piscium.
	54 . 13 . 21,59				1 . 21,77				92 . 1 . 51,64	*m* Ceti.
12,43	− 36 . 12 . 56,78				43,22				1 . 33 . 28,28	Polaris R.
	− 36 . 12 . 55,58								1 . 33 . 29,48	Polaris.
	54 . 48 . 40,87	29,866	39,7	38,8	1 . 24,31	6,98	10,902	8,91	92 . 36 . 57,57	Venus.

Coincidence of Micrometer Wire with fixed Wire = 10ʳ,084. One revolution = 20″,843.
Correction for Runs = + 0″,3. From Nov. 12. = + 2″,8.
Adopted Zenith Point = 234° . 18′ . 11″,83.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Runs taken Nov. 13. 22ʰ, and coincidence of wires found unaltered.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Nov. 14	(a) Polaris SP. R. M. .	93 . 35	4 . 15,8	17,0	14,2	16,7	12,4	13,4	13,653	− 1 . 14,39	93 . 38 . 0,93	G.
	Polaris SP.	194 . 55	3 . 26,9	25,7	24,0	25,2	21,1	25,0			194 . 58 . 24,97	G.
	Mercury center	298 . 25	3 . 17,3	20,1	15,4	17,2	12,8	16,0			298 . 28 . 16,78	G.
Nov. 15	⊙ N.L. M.	304 . 45	4 . 13,2	14,8	12,0	13,1	11,0	13,5	14,454	− 1 . 31,08	304 . 47 . 42,24	G.
	⊙ S.L.	305 . 15	4 . 59,8	61,9	60,0	60,4	57,9	58,2			305 . 20 . 0,17	G.
	Arcturus R. M.	22 . 5	3 . 21,2	21,9	16,9	20,3	17,2	20,7	10,790	− 14,72	22 . 8 . 5,28	G.
	Arcturus	266 . 25	3 . 18,8	20,0	16,9	18,4	14,4	16,9			266 . 28 . 17,87	G.
Nov. 16	α Cygni R. M	46 . 45	2 . 13,3	15,0	10,2	13,0	7,3	12,7	8,872	+ 25,26	46 . 47 . 37,38	G.
	(b) α Cygni	241 . 45	3 . 44,0	45,2	41,4	43,1	41,3	42,8		+ 2,23	241 . 48 . 45,55	G.
	ν Cygni	245 . 55	3 . 10,7	12,6	8,3	10,8	5,7	9,6			245 . 58 . 9,92	G.
	(c) Venus S.L.	289 . 55	3 . 8,8	9,4	6,5	9,0	5,3	5,8		+ 0,97	289 . 58 . 8,74	G.
Nov. 17	⊙ N.L. M.	305 . 15	0 . 13,2	13,0	11,2	13,8	10,6	15,0	3,632	+ 2 . 14,38	305 . 17 . 27,21	G.
	⊙ S.L.	305 . 45	4 . 48,1	47,0	43,7	46,4	44,0	46,1			305 . 49 . 46,53	G.
	ψ Capricorni	312 . 15	2 . 54,5	54,4	52,0	54,6	51,8	53,4			312 . 17 . 53,85	G.
	ζ Capricorni M.	309 . 30	4 . 31,9	32,5	30,0	31,5	28,2	30,4	10,374	− 6,15	309 . 34 . 25,22	G.
	ε Capricorni	306 . 35	4 . 45,8	45,9	44,0	45,4	42,8	44,0			306 . 39 . 45,30	G.
	υ U. Maj. SP. R. M.	122 . 10	4 . 40,0	41,4	38,0	40,4	36,7	38,9	9,100	+ 20,41	122 . 15 . 0,28	G.
	(d) υ Ursæ Majoris SP.	166 . 20	1 . 24,8	25,2	23,2	25,0	21,0	25,2		− 1,08	166 . 21 . 23,17	G.
	Uranus	298 . 25	2 . 41,3	41,8	37,9	39,8	37,3	39,9			298 . 27 . 40,03	G.
	(e) ☽ S.L.	294 . 25	1 . 48,5	48,8	45,2	49,0	45,3	46,8		− 10,24	294 . 26 . 37,28	G.
	☽ S.L. M.	294 . 25	1 . 48,5	48,8	45,2	49,0	45,3	46,8	10,360	− 5,90 − 5,12	294 . 26 . 36,50	G.
	☽ S.L. M.	294 . 25	1 . 48,5	48,8	45,2	49,0	45,3	46,8	10,626	− 11,40	294 . 26 . 36,12	G.
	☽ S.L. M.	294 . 25	1 . 48,5	48,8	45,2	49,0	45,3	46,8	10,865	− 16,32 + 5,12	294 . 26 . 36,32	G.
	☽ S.L. M.	294 . 25	1 . 48,5	48,8	45,2	49,0	45,3	46,8	11,098	− 21,09 + 10,24	294 . 26 . 36,67	G.
	β Leonis R. M.	17 . 30	4 . 17,5	18,4	14,5	16,1	13,4	15,7	7,473	+ 54,33	17 . 35 . 10,85	G.
	(b) β Leonis	271 . 0	1 . 13,9	13,2	12,2	14,0	10,2	13,7		+ 1,81	271 . 1 . 14,84	G.
	(f) γ Urs. Maj. R. M. ..	56 . 40	1 . 11,4	10,2	9,3	9,8	7,8	10,2	9,742	+ 7,08 + 0,61	56 . 41 . 17,64	G.
	γ Ursæ Majoris	231 . 50	5 . 5,4	4,3	3,0	4,4	1,6	3,3		+ 2,48	231 . 55 . 6,85	G.
	(f) δ Urs. Maj. R. M. .	60 . 0	1 . 27,0	26,8	24,0	26,9	24,0	26,7	9,918	+ 3,41 + 0,58	60 . 1 . 30,09	G.
	δ Ursæ Majoris	228 . 30	4 . 54,0	54,7	52,1	52,5	50,2	51,1		+ 2,60	228 . 34 . 55,70	G.
	Venus S.L.	290 . 20	3 . 49,3	49,1	46,4	46,9	45,6	46,8			290 . 23 . 47,87	G.
	Polaris SP. R. M. .	93 . 35	4 . 12,7	12,7	11,1	12,2	8,4	9,8	13,480	− 1 . 10,89	93 . 38 . 0,83	G.
	Polaris SP.	194 . 55	3 . 26,8	25,5	23,9	24,2	20,8	25,0			194 . 58 . 24,83	G.
	Mercury center	300 . 5	4 . 56,8	57,2	54,9	55,1	53,2	53,5			300 . 9 . 55,78	G.
Nov. 18	⊙ S.L. M.	306 . 5	1 . 24,8	23,8	22,0	24,7	20,0	23,8	16,474	− 2 . 13,29	306 . 4 . 10,08	G.
	⊙ N.L.	305 . 30	1 . 50,0	50,0	47,5	50,0	46,0	48,0			305 . 31 . 48,83	G.
	Venus S.L.	290 . 45	4 . 31,0	31,4	29,4	29,3	26,2	28,9			290 . 49 . 29,98	G.
Nov. 19	(g) ☽ S.L.	281 . 45	4 . 24,1	26,1	20,9	22,7	21,2	22,5		− 9,98	281 . 49 . 13,54	G.
	☽ S.L. M.	281 . 45	4 . 24,1	26,1	20,9	22,7	21,2	22,5	10,310	− 4,86 − 4,99	281 . 49 . 13,67	G.
	☽ S.L. M.	281 . 45	4 . 24,1	26,1	20,9	22,7	21,2	22,5	10,598	− 10,82	281 . 49 . 12,72	G.
	☽ S.L. M.	281 . 45	4 . 24,1	26,1	20,9	22,7	21,2	22,5	10,830	− 15,59 + 4,99	281 . 49 . 12,92	G.
	☽ S.L. M.	281 . 45	4 . 24,1	26,1	20,9	22,7	21,2	22,5	11,090	− 20,92 + 9,98	281 . 49 . 12,58	G.

(a) Not satisfactory.
(b) At the 5th wire.
(c) Very cloudy: at the 5th wire.
(d) At the 4th wire.

(e) At the five wires: occasionally faint.
(f) At the 4th and 5th wires.
(g) At the five wires: faint.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
12,95	− 39 . 19 . 49,10	29,866	39,7	38,8	48,79				− 1 . 33 . 29,61	Polaris SP. R.
	− 39 . 19 . 46,86								− 1 . 33 . 27,37	Polaris SP.
	64 . 10 . 4,95	29,900	42,3	43,4	2 . 1,48	6,45			101 . 59 . 8,26	Mercury.
	70 . 29 . 30,41	29,903	43,8	45,7	2 . 44,52	8,16		16 . 12,20	108 . 35 . 27,25	⊙.
	71 . 1 . 48,34				2 . 49,47	8,19			108 . 35 . 25,70	⊙.
11,58	32 . 10 . 6,55	29,824	46,0	47,2	36,77				69 . 57 . 51,60	Arcturus R.
	32 . 10 . 6,04								69 . 57 . 51,09	Arcturus.
11,47	7 . 30 . 34,45	29,636	47,6	47,2	7,66				45 . 17 . 50,39	α Cygni R.
	7 . 30 . 33,72								45 . 17 . 49,66	α Cygni.
	11 . 39 . 58,09				12,00				49 . 27 . 18,37	ν Cygni.
	55 . 39 . 56,91	29,332	46,0	45,5	1 . 24,30	6,95	10,881	8,68	93 . 28 . 13,86	Venus.
	70 . 59 . 15,38	29,344	46,5	47,1	2 . 45,42	8,19		16 . 12,60	109 . 5 . 13,49	⊙.
	71 . 31 . 34,70				2 . 50,50	8,21			109 . 5 . 12,67	⊙.
	77 . 59 . 42,02	29,260	43,5	41,5	4 . 26,32				115 . 51 . 16,62	ψ Capricorni.
	75 . 16 . 13,39	29,242	42,5	41,2	3 . 37,24				113 . 6 . 58,91	ζ Capricorni.
	72 . 21 . 33,47				3 . 0,51				110 . 11 . 42,26	ε Capricorni.
11,73	− 67 . 56 . 48,45				2 . 22,31				− 30 . 12 . 2,48	υ U. Maj. SP. R.
	− 67 . 56 . 48,66								− 30 . 12 . 2,69	υ Urs. Maj. SP.
	64 . 9 . 28,20	29,204			1 . 59,12	0,39			101 . 58 . 35,21	Uranus.
	60 . 8 . 25,45	29,128	42,8	42,2					96 . 51 . 49,83	☽.
	60 . 8 . 24,67								96 . 51 . 49,05	☽.
	60 . 8 . 24,29				1 . 40,18	49 . 43,28		15 . 40,80	96 . 51 . 48,67	☽.
	60 . 8 . 24,49								96 . 51 . 48,87	☽.
	60 . 8 . 24,84								96 . 51 . 49,22	☽.
12,85	36 . 43 . 0,98	28,950	42,4	39,4	43,00				74 . 30 . 52,26	β Leonis R.
	36 . 43 . 3,01								74 . 30 . 54,29	β Leonis.
12,25	− 2 . 23 . 5,81				2,40				35 . 24 . 0,07	γ Urs. Maj. R.
	− 2 . 23 . 4,98								35 . 24 . 0,90	γ Ursæ Majoris.
12,90	− 5 . 43 . 18,26		41,4	38,8	5,79				32 . 3 . 44,23	δ Urs. Maj. R.
	− 5 . 43 . 16,13								32 . 3 . 46,36	δ Ursæ Majoris.
	56 . 5 . 36,04	28,970	40,7	39,3	1 . 25,69	6,94	10,850	8,39	93 . 53 . 54,68	Venus.
12,83	− 39 . 19 . 49,00				47,28				− 1 . 33 . 28,00	Polaris SP. R.
	− 39 . 19 . 47,00								− 1 . 33 . 26,00	Polaris SP.
	65 . 51 . 43,95	29,000	41,5	41,5	2 . 7,69	6,25			103 . 40 . 53,67	Mercury.
	71 . 45 . 58,25	29,002	42,7	43,3	2 . 52,21	8,22		16 . 12,80	109 . 19 . 37,72	⊙.
	71 . 13 . 37,00				2 . 47,02	8,20			109 . 19 . 36,90	⊙.
	56 . 31 . 18,15	29,080	38,5	37,2	1 . 27,80	6,93	10,858	8,47	94 . 19 . 38,83	Venus.
	47 . 31 . 1,71	29,224	39,0	38,0					84 . 22 . 25,29	☽.
	47 . 31 . 1,84								84 . 22 . 25,42	☽.
	47 . 31 . 0,89				1 . 3,70	41 . 25,57		15 . 22,83	84 . 22 . 24,47	☽.
	47 . 31 . 1,09								84 . 22 . 24,67	☽.
	47 . 31 . 0,75								84 . 22 . 24,33	☽.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},084. One revolution = 20″,843.
Correction for Runs = + 2″,8. From Nov. 17. = + 4″,1.
Adopted Zenith Point = 234° . 18′ . 11″,83.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Nov. 16. 22^{h}, the coincidences of the micrometer and fixed wires at the five vertical wires were found to be 10^{r},074, 10^{r},077, 10^{r},079, 10^{r},082, 10^{r},086. These are used for the respective wires from Nov. 17.
Runs taken Nov. 20. 23^{h}.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Nov. 20	*o* Piscium	278. 5	4.59,5	61,0	59,8	57,7	57,3	57,2			278. 9.59,43	G.
	β Arietis R. M.	22. 0	4.25,8	27,1	22,3	24,0	24,8	24,4	3,974	+2. 7,24	22. 6.32,57	G.
	(*a*) β Arietis	266.25	4.49,0	49,8	48,0	46,6	46,3	46,4		+2,95	266.29.51,28	G.
	(*b*) ☽ S.L.	275.50	3. 9,9	9,0	7,7	6,4	4,8	7,8		−9,46	275.52.58,56	G.
	☽ S.L. M.	275.50	3. 9,9	9,0	7,7	6,4	4,8	7,8	10,338	−5,44 −4,73	275.52.57,85	G.
	☽ S.L. M.	275.50	3. 9,9	9,0	7,7	6,4	4,8	7,8	10,574	−10,32	275.52.57,70	G.
	☽ S.L. M.	275.50	3. 9,9	9,0	7,7	6,4	4,8	7,8	10,833	−15,65 +4,73	275.52.57,10	G.
	☽ S.L. M.	275.50	3. 9,9	9,0	7,7	6,4	4,8	7,8	11,032	−19,72 +9,46	275.52.57,76	G.
	38 Arietis	274.40	4.46,6	47,0	46,1	44,4	44,1	45,1			274.44.46,20	G.
	π Arietis	269.40	3.21,7	21,8	19,2	19,7	19,0	20,8			269.43.20,82	G.
	α Ceti R. M.	5.30	2.23,3	24,0	21,5	21,7	22,0	22,8	7,328	+57,34	5.33.20,22	G.
	α Ceti	283. 0	3. 5,5	5,7	4,9	2,8	2,4	2,8			283. 3. 4,43	G.
	(*c*) Arcturus R. M.	22. 5	3.32,4	33,1	28,5	30,9	28,2	32,2	11,288	−25,20	22. 8. 6,17	G.
	Arcturus	266.25	3.18,7	19,4	17,4	17,8	15,2	17,1			266.28.18,05	G.
Nov. 21	(*d*) ⊙ N.L. M.	306.10	4.17,1	19,3	15,4	16,8	15,5	15,9	14,842	−1.39,27	306.12.37,98	G.
	⊙ S.L.	306.40	4.59,0	60,8	58,4	59,0	56,0	57,1			306.44.59,07	G.
Nov. 23	(*e*) Uranus	298.25	1.16,7	17,4	15,0	18,4	14,1	17,0			298.26.16,62	G.
	α Draconis SP. R. M.	116.55	0.19,8	19,4	19,5	21,7	17,5	19,9	13,506	−1.11,44	116.54. 8,23	G.
	α Draconis SP	171.40	2.13,3	14,9	13,0	13,7	12,2	13,9			171.42.13,80	G.
	38 Arietis	274.40	4.46,4	49,4	46,3	47,0	46,0	45,8			274.44.47,47	G.
	π Arietis	269.40	3.20,0	21,8	18,0	21,0	18,5	21,1			269.43.20,52	G.
	β Urs. Min. SP. R. M.	107.15	1.19,8	19,9	18,3	21,1	17,7	20,8	14,340	−1.28,81	107.14.50,97	G.
	β Ursæ Minoris SP.	181.20	1.32,7	34,2	30,2	33,3	30,4	34,7			181.21.32,80	G.
	α Persei R. M.	51.20	1.13,1	15,3	11,7	13,3	10,5	14,4	7,833	+46,82	51.22. 0,04	G.
	α Persei	237.10	4.24,7	28,4	21,7	23,8	22,9	24,6			237.14.24,95	G.
	(*f*) ☽ N.L. M.	262. 0	3.19,7	21,9	18,8	19,8	20,5	19,8	10,748	−14,05 −5,84	262. 3. 0,64	G.
	☽ N.L. M.	262. 0	3.19,7	21,9	18,8	19,8	20,5	19,8	10,910	−17,36 −2,92	262. 3. 0,25	G.
	☽ N.L.	262. 0	2.59,8	62,0	59,3	58,5	58,5	57,7			262. 2.59,72	G.
	☽ N.L. M.	262. 0	2.59,8	62,0	59,3	58,5	58,5	57,7	10,258	−3,67 +2,92	262. 2.58,97	G.
	☽ N.L. M.	262. 0	2.59,8	62,0	59,3	58,5	58,5	57,7	10,408	−6,71 +5,84	262. 2.58,85	G.
	Capella R. M.	47.50	4.21,1	24,0	19,5	19,8	19,1	20,0	8,340	+36,25	47.54.57,42	G.
	Capella	240.40	1.27,8	27,0	24,2	25,4	25,3	26,5			240.41.26,23	G.
	n Tauri	264.35	0. 7,0	4,4	6,0	5,8	3,7	6,5			264.35. 5,58	G.
	(*g*) β Tauri R. M.	30.30	3.19,4	19,8	16,5	18,3	18,0	19,3	9,224	+17,81	30.33.36,81	G.
	β Tauri	258. 0	2.46,9	46,3	43,4	44,0	44,0	45,2			258. 2.45,35	G.
	Venus S.L.	292.55	2.51,3	52,1	50,0	51,1	48,3	49,5			292.57.50,77	G.
	(*h*) Aurrctus R. M.	22. 5	3.22,8	24,2	20,3	20,8	18,9	22,7	10,974	−18,65	22. 8. 3,42	G.
	Arcturus	266.25	3.19,6	19,6	17,0	18,1	15,4	17,3		+1,86	266.28.20,14	G.
Nov. 24	(*i*) ⊙ S.L. M.	307.20	4.39,7	44,0	38,4	39,4	38,7	38,3	15,810	−1.59,46	307.22.40,92	G.
	⊙ N.L.	306.50	0.20,0	18,7	17,8	20,4	16,4	19,2			306.50.18,78	G.
	α Cephei R. M.	63.55	4.17,9	20,7	17,7	17,7	17,3	17,5	10,544	−9,69	63.59. 9,03	G.
	α Cephei	224.35	2.16,7	17,3	13,3	15,9	16,5	16,1			224.37.16,28	G.

(*a*) At the comb.
(*b*) At the five wires: irregular motion and limb uneven. (*c*) Very faint.
(*d*) Exceedingly misty.
(*e*) Before this observation Microscope B was taken down and rectified: the screw had become rusty by water penetrating from the micrometer head, which in this microscope is directed upwards.
(*f*) At the five wires.
(*g*) The wind blowing hard from the South prevented the observation of southern stars by reflection.
(*h*) The reflection observation not good: the direct observation at the fifth wire.
(*i*) Very unsteady.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	43 . 51 . 47,60	29,976	36,3	34,8	57,90				81 . 39 . 53,88	ο Piscium.
11,93	32 . 11 . 39,26				37,95				69 . 59 . 25,49	β Arietis R.
	32 . 11 . 39,45								69 . 59 . 25,68	β Arietis.
	41 . 34 . 46,73								78 . 30 . 39,05	☽.
	41 . 34 . 46,02								78 . 30 . 38,34	☽.
	41 . 34 . 45,87				53,46	36 . 54,98		15 . 14,44	78 . 30 . 38,19	☽.
	41 . 34 . 45,27								78 . 30 . 37,59	☽.
	41 . 34 . 45,93								78 . 30 . 38,25	☽.
	40 . 26 . 34,37		35,8	34,6	51,38				78 . 14 . 34,13	38 Arietis.
	35 . 25 . 8,99				42,88				73 . 13 . 0,25	π Arietis.
12,33	48 . 44 . 51,61				1 . 8,69				86 . 33 . 8,48	α Ceti R.
	48 . 44 . 52,60								86 . 33 . 9,57	α Ceti.
12,11	32 . 10 . 5,66	30,040	38,8	38,8	37,68				69 . 57 . 51,62	Arcturus R.
	32 . 10 . 6,22								69 . 57 . 52,18	Arcturus.
	71 . 54 . 26,15	30,020	40,0	40,9	3 . 0,61	8,24		16 . 13,40	110 . 0 . 40,20	⊙.
	72 . 26 . 47,24				3 . 6,40	8,26			110 . 0 . 40,26	⊙.
	64 . 8 . 4,79	29,265	42,2	41,8	1 . 59,11	0,38			101 . 57 . 11,80	Uranus.
11,02	− 62 . 35 . 56,40	29,310	39,8	39,6	1 . 52,16				− 24 . 50 . 40,28	α Draconis SP. R.
	− 62 . 35 . 58,03								− 24 . 50′ . 41,91	α Draconis SP.
	40 . 26 . 35,64	29,324		39,3	49,78				78 . 14 . 33,70	38 Arietis.
	35 . 25 . 8,69				41,55				73 . 12 . 58,52	π Arietis.
11,89	− 52 . 56 . 39,14				1 . 17,26				− 15 . 10 . 48,12	β U. Min. SP. R.
	− 52 . 56 . 39,03								− 15 . 10 . 48,01	β Urs. Min. SP.
12,50	2 . 56 . 11,79				3,00				40 . 43 . 23,07	α Persei R.
	2 . 56 . 13,12								40 . 43 . 24,40	α Persei.
	27 . 44 . 48,81	29,310	39,7	39,2					65 . 22 . 6,86	☽.
	27 . 44 . 48,42								65 . 22 . 6,47	☽.
	27 . 44 . 47,89				30,73	25 . 14,78		14 . 53,82	65 . 22 . 5,94	☽.
	27 . 44 . 47,14								65 . 22 . 5,19	☽.
	27 . 44 . 47,02								65 . 22 . 5,07	☽.
11,83	6 . 23 . 14,41			38,6	6,55				44 . 10 . 29,14	Capella R.
	6 . 23 . 14,40								44 . 10 . 29,23	Capella.
	30 . 16 . 53,75				34,15				68 . 4 . 36,18	n Tauri.
11,08	23 . 44 . 35,02				25,73				61 . 32 . 9,03	β Tauri R.
	23 . 44 . 33,52								61 . 32 . 7,53	β Tauri.
	58 . 39 . 38,94	29,325	38,3	37,2	1 . 36,11	6,87	10,831	8,15	96 . 28 . 8,31	Venus
11,78	32 . 10 . 8,41	29,354	38,8	38,9	36,82				69 . 57 . 53,51	Arcturus R.
	32 . 10 . 8,31								69 . 57 . 53,41	Arcturus.
	73 . 4 . 29,09	29,360	40,5	41,3	3 . 9,20	8,29		16 . 14,00	110 . 38 . 24,28	⊙.
	72 . 32 . 6,95				3 . 3,12	8,27			110 . 38 . 24,08	⊙.
12,66	− 9 . 40 . 57,20	29,400	39,9	38,8	10,01				28 . 6 . 1,07	α Cephei R.
	− 9 . 40 . 55,55								28 . 6 . 2,72	α Cephei.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},079 at middle Wire. One revolution = 20″,843.
Correction for Runs = + 4″,1.
Adopted Zenith Point = 234° . 18′ . 11″,83.
Assumed Co-latitude = 37° . 47′ . 8″,28.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes. A	B	C	D	E	F	Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Nov. 24	(a) Uranus	298 . 25	0 . 54,8	55,7	53,3	54,0	52,4	54,4		+ 1,51	298 . 25 . 55,73	G.
	α Urs. Maj. SP. R. M............	119 . 25	1 . 18,2	19,3	16,3	18,3	15,7	18,2	12,158	– 43,34	119 . 25 . 34,51	G.
	α Ursæ Majoris SP.	169 . 10	0 . 47,1	47,5	45,5	48,1	46,8	48,3			169 . 10 . 47,33	G.
	Ceres	304 . 50	4 . 31,8	33,4	30,0	31,7	30,0	31,5			304 . 54 . 32,02	G.
	υ Piscium............	278 . 5	4 . 58,2	62,6	59,4	58,1	58,3	57,3			278 . 9 . 59,67	G.
	α Arietis R. M......	24 . 45	1 . 19,3	18,3	16,8	17,2	16,7	18,3	7,272	+ 58,51	24 . 47 . 16,46	G.
	α Arietis	263 . 45	4 . 4,1	6,8	5,1	3,0	2,0	4,4			263 . 49 . 4,80	G.
	n Tauri	264 . 35	0 . 8,5	7,0	8,5	7,5	4,0	7,1			264 . 35 . 7,12	G.
	β Tauri R. M.......	30 . 30	3 . 18,3	21,1	17,8	17,4	17,3	18,4	9,170	+ 18,95	30 . 33 . 37,78	G.
	β Tauri	258 . 0	2 . 47,2	46,0	45,3	43,7	42,8	45,7			258 . 2 . 45,50	G.
	(b) ☽ N.L...............	259 . 50	0 . 60,4	59,4	59,8	58,8	57,0	59,7		– 3,86	259 . 50 . 55,46	G.
	☽ N.L. M...........	259 . 50	0 . 60,4	59,4	59,8	58,8	57,0	59,7	10,231	– 3,20 – 1,93	259 . 50 . 54,19	G.
	☽ N.L. M...........	259 . 50	0 . 60,4	59,4	59,8	58,8	57,0	59,7	10,310	– 4,82	259 . 50 . 54,50	G.
	☽ N.L. M...........	259 . 50	0 . 60,4	59,4	59,8	58,8	57,0	59,7	10,398	– 6,59 + 1,93	259 . 50 . 54,66	G.
	☽ N.L. M...........	259 . 50	0 . 60,4	59,4	59,8	58,8	57,0	59,7	10,499	– 8,61 + 3,86	259 . 50 . 54,57	G.
Nov. 25	⊙ N.L. M.	307 . 0	4 . 20,1	21,1	18,8	19,2	17,3	19,5	16,680	– 2 . 17,59	307 . 2 . 2,33	G.
	⊙ S.L...............	307 . 30	4 . 23,2	25,0	21,3	22,3	21,0	22,2			307 . 34 . 23,10	G.
Nov. 29	(c) α Draconis SP. R. M................	116 . 55	0 . 14,7	9,2	11,3	10,4	9,0	10,8	12,848	– 57,55	116 . 54 . 13,35	G.
	α Draconis SP......	171 . 40	2 . 13,3	8,8	10,5	8,9	9,4	9,9			171 . 42 . 10,02	G.
	Polaris SP. R. M...	93 . 35	4 . 18,8	14,7	15,8	14,4	11,8	13,2	13,818	– 1 . 17,77	93 . 37 . 56,78	G.
	Polaris SP.	194 . 55	3 . 31,4	25,5	25,9	26,0	23,5	27,1			194 . 58 . 26,38	G.
Nov. 30	(d) ☽ SL.	274 . 5	2 . 33,7	29,1	31,4	30,7	27,0	30,7		+ 5,72	274 . 7 . 36,02	G.
	☽ S.L. M...........	274 . 5	2 . 33,7	29,1	31,4	30,7	27,0	30,7	9,913	+ 3,54 + 2,86	274 . 7 . 36,70	G.
	☽ S.L. M...........	274 . 5	2 . 33,7	29,1	31,4	30,7	27,0	30,7	9,771	+ 6,59	274 . 7 . 36,89	G.
	☽ S.L. M...........	274 . 5	2 . 33,7	29,1	31,4	30,7	27,0	30,7	9,628	+ 9,67 – 2,86	274 . 7 . 37,11	G.
	☽ S.L. M...........	274 . 5	2 . 33,7	29,1	31,4	30,7	27,0	30,7	9,532	+ 11,69 – 5,72	274 . 7 . 36,27	G.
	α Urs. Maj. R. M...	64 . 40	3 . 25,8	20,7	21,3	19,4	15,7	20,4	11,723	– 34,11	64 . 42 . 46,26	G.
	α Ursæ Majoris.....	223 . 50	3 . 42,2	37,0	38,0	36,8	34,0	36,6			223 . 53 . 37,23	G.
	n Leonis	272 . 15	3 . 27,8	23,0	23,7	22,8	18,8	24,2			272 . 18 . 23,20	G.
	ι Leonis..............	275 . 0	4 . 32,2	27,7	29,8	27,2	23,5	28,7			275 . 4 . 27,95	G.
	τ Leonis.............	282 . 40	4 . 38,0	34,2	34,8	32,8	30,4	34,3			282 . 44 . 33,83	G.
	(e) β Leonis R. M......	17 . 30	4 . 19,5	15,9	14,4	13,2	8,8	13,9	7,440	+ 55,18	17 . 35 . 9,23	G.
	β Leonis	271 . 0	1 . 14,4	8,3	11,4	10,9	4,4	12,5			271 . 1 . 10,25	G.
	c Virginis............	282 . 15	1 . 37,9	31,2	33,9	33,1	29,4	34,8			282 . 16 . 33,30	G.
	γ^1 Virginis...........	287 . 0	2 . 54,5	48,7	50,8	49,5	45,0	49,3			287 . 2 . 49,48	G.
	δ Virginis...........	282 . 10	2 . 49,4	44,0	44,8	44,3	39,9	46,0			282 . 12 . 44,58	G.
	Polaris SP. R. M..	93 . 35	4 . 20,1	14,3	16,5	16,3	11,4	15,0	13,940	– 1 . 20,30	93 . 37 . 55,07	G.
	Polaris SP.	194 . 55	3 . 35,3	28,2	29,4	28,8	25,3	30,0			194 . 58 . 29,32	G.
Dec. 1	β Cephei R. M......	71 . 55	1 . 19,0	13,5	16,0	14,1	10,8	14,3	10,890	– 16,73	71 . 55 . 57,82	G.
	β Cephei............	216 . 40	0 . 30,9	26,2	26,9	26,5	23,2	26,3			216 . 40 . 26,65	G.
	(a) Uranus	298 . 20	3 . 22,4	19,8	20,0	18,2	15,1	17,9		+ 1,51	298 . 23 . 20,23	G.

(a) At the 5th wire.

(b) At the five wires: pretty good.

(c) Before this observation additional weights were put to the counterpoise of the axis, the circle not moving freely enough.

(d) At the five wires: very unsteady and badly defined. The shutters had not been long open.

(e) Not good.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	64 . 7 . 43,90	29,426	39,2	38,2	2 . 0,62	0,38			101 . 56 . 53,18	Uranus.
10,92	− 65 . 7 . 22,68	29,444	39,0	37,7	2 . 6,31				− 27 . 22 . 20,71	α U. Maj. SP. R.
	− 65 . 7 . 24,50								− 27 . 22 . 22,53	α Urs. Maj. SP.
	70 . 36 . 20,19				2 . 45,73	3,04			108 . 26 . 11,16	Ceres.
	43 . 51 . 47,84	29,476	37,8	36,2	56,77				81 . 39 . 52,89	o Piscium.
10,63	29 . 30 . 55,37				33,46				67 . 18 . 37,11	α Arietis R.
	29 . 30 . 52,97								67 . 18 . 34,71	α Arietis.
	30 . 16 . 55,29	29,530	36,4	35,1	34,66				68 . 4 . 38,23	n Tauri.
11,64	23 . 44 . 34,05				26,11				61 . 32 . 8,44	β Tauri R.
	23 . 44 . 33,67								61 . 32 . 8,16	β Tauri.
	25 . 32 . 43,63				28,37	23 . 14,40		14 . 48,79	63 . 11 . 54,67	☽.
	25 . 32 . 42,36								63 . 11 . 53,40	☽.
	25 . 32 . 42,67								63 . 11 . 53,71	☽.
	25 . 32 . 42,83								63 . 11 . 53,87	☽.
	25 . 32 . 42,74								63 . 11 . 53,78	☽.
	72 . 43 . 50,50	29,658	38,3	37,6	3 . 8,60	8,28		16 . 14,10	110 . 50 . 13,20	⊙.
	73 . 16 . 11,27				3 . 14,90	8,30			110 . 50 . 12,05	⊙.
11,69	− 62 . 36 . 1,52	29,372	48,5	47,9	1 . 50,47				− 24 . 50 . 43,71	α Draconis SP. R.
	− 62 . 36 . 1,81								− 24 . 50 . 44,00	α Draconis SP.
11,58	− 39 . 19 . 44,95	29,402	47,3	45,8	47,34				− 1 . 33 . 24,01	Polaris SP. R.
	− 39 . 19 . 45,45								− 1 . 33 . 24,51	Polaris SP.
	39 . 49 . 24,19	29,800	42,4	37,4	49,67	35 . 6,08		15 . 1,23	76 . 47 . 14,83	☽.
	39 . 49 . 24,87								76 . 47 . 15,51	☽.
	39 . 49 . 25,06								76 . 47 . 15,70	☽.
	39 . 49 . 25,28								76 . 47 . 15,92	☽.
	39 . 49 . 24,44								76 . 47 . 15,08	☽.
11,75	− 10 . 24 . 34,43		40,8	36,0	10,98				27 . 22 . 22,87	α Urs. Maj. R.
	− 10 . 24 . 34,40								27 . 22 . 22,90	α Ursæ Majoris.
	38 . 0 . 11,37				46,68				75 . 48 . 6,33	n Leonis.
	40 . 46 . 16,12				51,51				78 . 34 . 15,91	ι Leonis.
	48 . 26 . 22,00			35,7	1 . 7,38				86 . 14 . 37,66	τ Leonis.
9,74	36 . 43 . 2,60	29,804	39,7	35,1	44,66				74 . 30 . 55,54	β Leonis R.
	36 . 42 . 58,42								74 . 30 . 51,36	β Leonis.
	47 . 58 . 21,47	29,816	38,8	35,4	1 . 6,37				85 . 46 . 36,12	c Virginis.
	52 . 44 . 37,65	29,830	38,3	34,2	1 . 18,83				90 . 33 . 4,76	γ^1 Virginis.
	47 . 54 . 32,75				1 . 6,42				85 . 42 . 47,45	δ Virginis.
12,20	− 39 . 19 . 43,24	29,838	37,7	35,7	49,05				− 1 . 33 . 24,01	Polaris SP. R.
	− 39 . 19 . 42,51								− 1 . 33 . 23,28	Polaris SP.
12,24	− 17 . 37 . 45,99	29,940	43,4	42,3	18,84				20 . 9 . 3,45	β Cephei R.
	− 17 . 37 . 45,18								20 . 9 . 4,26	β Cephei.
	64 . 5 . 8,40	29,960	42,6	42,1	2 . 1,59	0,38			101 . 54 . 17,89	Uranus.

Coincidence of Micrometer Wire with fixed Wire $= 10^{r},079$ at middle Wire. One revolution =20″,843.

Correction for Runs = + 4″,1. From Nov. 29. = − 1″,6.

Adopted Zenith Point = 234° . 18′ . 11″,83.

Assumed Co-latitude = 37° . 47′ . 8″,28.

Nov. 30. 23^{h}, runs taken, and coincidence of wires at the five vertical wires found to be $10^{r},082$, $10^{r},083$, $10^{r},087$, $10^{r},092$, $10^{r},093$. These are used from Nov. 29.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Dec. 1	α Urs. Maj. SP. R. M.	119.25	1.16,0	12,5	13,9	12,7	8,4	12,9	11,844	− 36,62	119.25.36,05	G.
	α Urs. Maj. SP.	169.10	0.51,8	46,7	49,0	48,4	44,8	47,9			169.10.48,05	G.
	α Andromedæ R. M.	30.15	1.19,4	14,3	15,2	12,4	9,8	15,0	7,060	+ 1. 3,10	30.17.17,38	G.
	α Andromedæ	258.15	3.67,2	64,7	65,0	62,3	58,4	63,1			258.19. 3,23	G.
Dec. 2	(a) ☽ S.L.	285.45	2.10,5	10,1	8,7	6,3	5,0	6,4		+ 6,82	285.47.14,54	G.
	☽ S.L. M.	285.45	2.10,5	10,1	8,7	6,3	5,0	6,4	9,904	+ 3,73 + 3,41	285.47.14,86	G.
	☽ S.L. M.	285.45	2.10,5	10,1	8,7	6,3	5,0	6,4	9,748	+ 7,07	285.47.14,79	G.
	☽ S.L. M.	285.45	2.10,5	10,1	8,7	6,3	5,0	6,4	9,601	+ 10,24 − 3,41	285.47.14,55	G.
	☽ S.L. M.	285.45	2.10,5	10,1	8,7	6,3	5,0	6,4	9,455	+ 13,31 − 6,82	285.47.14,21	G.
	Polaris SP. R. M.	93.35	4.12,0	10,6	8,9	8,9	5,0	7,4	13,588	− 1.12,97	93.37.55,61	G.
	Polaris SP.	194.55	3.32,4	28,2	26,4	26,8	26,0	27,8			194.58.27,75	G.
Dec. 3	(b) ⊙ N.L. M.	308.20	4.15,6	14,2	13,0	10,3	9,8	10,3	16,505	− 2.13,78	308.21.57,20	G.
	⊙ S.L.	308.50	4.23,9	22,9	20,0	20,1	17,5	20,2			308.54.20,53	G.
Dec. 5	(b) γ Urs. Maj. SP. R. M.	127.25	3.16,1	12,0	11,8	11,5	9,0	10,9	15,659	− 1.56,14	127.26.15,56	G.
	γ Ursæ Majoris SP.	161.10	0. 9,4	4,7	5,2	3,7	2,7	5,9			161.10. 5,27	G.
	α Cassiopeiæ R. M.	57.40	3.19,0	14,1	12,7	12,7	11,8	14,0	7,785	+ 47,98	57.44. 1,85	G.
	α Cassiopeiæ	230.50	2.26,8	22,2	20,7	21,2	19,0	21,7			230.52.21,80	G.
	(c) n Leonis M.	272.15	4.16,9	13,3	13,2	9,9	10,5	11,0	12,102	− 42,00	272.18.30,23	G.
	ι Leonis	275. 0	4.36,1	35,1	32,8	30,3	30,9	31,2			275. 4.32,50	G.
Dec. 6	Uranus	298.20	1. 6,4	3,4	2,7	1,7	0,3	1,3			298.21. 2,57	G.
	(d) α Urs. Maj. SP. R. M.	119.25	1.15,4	12,0	10,8	10,2	6,6	10,9	11,722	− 34,08	119.25.36,84	G.
	α Urs. Maj. SP.	169.10	0.48,4	42,0	42,8	42,8	42,0	43,9			169.10.43,60	G.
	Venus S.L.	298.20	1.33,1	27,8	29,0	28,5	25,8	27,9			298.21.28,60	G.
Dec. 7	α Persei R. M.	51.20	1.15,6	12,2	11,0	10,4	8,5	12,6	7,690	+ 49,97	51.22. 1,52	G.
	α Persei	237.10	4.27,6	24,1	21,5	20,8	19,0	23,6			237.14.22,15	G.
	Capella R. M.	47.50	4.28,5	24,4	22,1	21,8	18,7	22,0	8,370	+ 35,79	47.54.58,09	G.
	Capella	240.40	1.29,8	25,1	24,8	23,6	20,7	25,2			240.41.24,67	G.
Dec. 8	⊙ S.L. M.	309.30	2.12,2	8,0	10,4	6,4	4,5	7,0	14,639	− 1.34,87	309.30.32,91	G.
	⊙ N.L.	308.55	3.11,8	7,4	8,2	6,4	1,6	7,1			308.58. 6,65	G.
	(e) Uranus	298.15	4.65,8	61,9	63,4	60,8	57,0	60,8			298.20. 1,62	G.
	β Urs. Min. SP. R. M.	107.15	1.22,2	18,0	18,5	17,4	13,7	17,7	13,958	− 1.20,68	107.14.57,05	G.
	β Ursæ Minoris SP.	181.20	1.31,4	26,2	27,5	24,8	22,3	26,8			181.21.26,30	G.
	α Persei R. M.	51.20	2.34,3	31,2	29,3	28,4	26,2	30,0	11,303	− 25,35	51.22. 4,20	G.
	α Persei	237.10	4.25,9	22,6	21,5	20,0	17,8	21,9			237.14.21,00	G.
	(f) σ Persei R. M.	49.25	4.43,4	42,2	39,2	38,9	36,3	38,9	5,858	+ 1.28,15 + 0,66	49.31. 7,96	G.
	σ Persei	239. 5	0.18,0	12,3	12,8	13,8	7,2	14,9		+ 2,29	239. 5.15,41	G.
	(g) δ Persei R. M.	49.20	0.30,3	25,0	26,0	25,0	23,5	25,8	8,019	+ 43,11	49.21. 8,98	G.
	δ Persei	239.15	0.19,7	12,5	13,0	14,1	8,4	15,4			239.15.13,82	G.

(a) At the five wires.
(b) Not good.
(c) Faint.
(d) Very cloudy.
(e) No correction for runs.
(f) At the 4th and 5th wires: reflection observation exceedingly faint.

(g) Very cloudy: not good. The South wind on this and several preceding days prevented observations of southern stars by reflection, and made it necessary to close the South shutters during the reflection observations.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
12,05	−65. 7.24,22	29,972	42,2	41,2	2. 7,64				−27.22.23,58	α U. Maj. SP. R.
	−65. 7.23,78								−27.22.23,14	α Urs. Maj. SP.
10,31	24. 0.54,45	29,988	41,5	40,6	26,55				61.48.29,28	α AndromedæR.
	24. 0.51,40								61.48.26,23	α Andromedæ.
	51.29. 2,71	29,570	47,5	47,3					88.17.49,21	☽.
	51.29. 3,03								88.17.49,53	☽.
	51.29. 2,96				1.12,71	44. 8,13		15.26,36	88.17.49,46	☽.
	51.29. 2,72								88.17.49,22	☽.
	51.29. 2,38								88.17.48,88	☽.
11,68	−39.19.43,78				47,46				−1.33.22,96	Polaris SP. R.
	−39.19.44,08								−1.33.23,26	Polaris SP.
	74. 3.45,37	29,600	49,8	49,9	3.19,28	8,35		16.15,30	112.10.19,88	☉.
	74.36. 8,70				3.26,43	8,37			112.10.19,74	☉.
10,42	−73. 8. 3,73	29,708	51,7	51,4	3. 8,11				−35.24. 3,56	γ U. Maj. SP. R.
	−73. 8. 6,56								−35.24. 6,39	γ Urs. Maj. SP.
11,83	−3.25.50,02				3,46				34.21.14,80	α Cassiopeiæ R.
	−3.25.50,03								34.21.14,79	α Cassiopeiæ.
	38. 0.18,40	29,840	47,3	46,2	45,78				75.48.12,46	n Leonis.
	40.46.20,67				50,51				78.34.19,46	ι Leonis.
	64. 2.50,74	29,806	49,8	49,0	1.59,04	0,38			101.51.57,68	Uranus.
10,22	−65. 7.25,01	29,796	49,3	48,5	2. 4,98				−27.22.21,71	α U. Maj. SP. R.
	−65. 7.28,23								−27.22.24,93	α Urs. Maj. SP.
	64. 3.16,77	29,388	50,2	49,9	1.57,21	6,69	10 798	7,63	101.52. 7,94	Venus.
11,84	2.56.10,31	29,450	44,8	44,5	2,98				40.43.21,57	α Persei R.
	2.56.10,32								40.43.21,58	α Persei.
11,38	6.23.13,74	29,470	43,6	42,3	6,53				44.10.28,55	Capella R.
	6.23.12,84								44.10.27,65	Capella.
	75.12.21,08	29,028	44,0	43,4	3.33,73	8,40		16.15,90	112.46.38,79	☉.
	74.39.54,82				3.26,08	8,38			112.46.36,70	☉.
	64. 1.49,79	28,950	43,1	42,3	1.57,17	0,38			101.50.54,86	Uranus.
11,68	−52.56.45,22		40,4	40,1	1.16,15				−15.10.53,09	β U. Min. SP. R.
	−52.56.45,53								−15.10.53,40	β Urs. Min. SP.
12,60	2.56. 7,63				2,95				40.43.18,86	α Persei R.
	2.56. 9,17								40.43.20,40	α Persei.
11,69	4.47. 3,87				4,82				42.34.16,97	σ Persei R.
	4.47. 3,58								42.34.16,68	σ Persei.
11,40	4.57. 2,85				4,99				42.44.16,12	δ Persei R.
	4.57. 1,99								42.44.15,26	δ Persei.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},087 at middle wire. One revolution = 20″,843.
Correction for Runs = −1″,6. From Dec. 7. = −4″,2.
Adopted Zenith Point = 234°. 18′. 11″,83.
Assumed Co-latitude = 37°. 47′. 8″,28.
Dec. 11. 23^{h}, Runs taken, and coincidence of wires at middle wire found to be unaltered.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Dec. 9	(a) Uranus	298 . 15	4 . 28,9	24,5	26,2	20,4	20,4	21,4		+ 1,51	298 . 19 . 24,53	G.
	α Cassiopeiæ R. M.	57 . 40	3 . 26,3	23,9	21,2	21,8	18,3	21,8	8,177	+ 39,81	57 . 44 . 1,54	G.
	α Cassiopeiæ.........	230 . 50	2 . 28,8	23,7	22,3	21,8	19,8	24,1			230 . 52 . 23,08	G.
	γ Cassiopeiæ R. M.	61 . 55	0 . 36,1	32,1	31,8	30,4	29,0	31,4	10,502	– 8,65	61 . 55 . 23,08	G.
	γ Cassiopeiæ.........	226 . 40	0 . 66,7	62,0	63,3	61,0	57,0	60,8			226 . 41 . 1,67	G.
	β Arietis R. M.	22 . 5	1 . 18,0	12,1	12,9	10,4	7,8	13,5	9,133	+ 19,88	22 . 6 . 32,16	G.
	β Arietis.............	266 . 25	4 . 55,4	53,1	51,0	50,5	46,4	50,2			266 . 29 . 50,43	G.
	(b) γ Ceti R. M.........	4 . 35	3 . 24,3	20,0	20,8	17,0	16,8	17,3	7,504	+ 53,84	4 . 39 . 12,74	G.
	γ Ceti	283 . 55	2 . 15,6	11,8	12,8	10,3	6,4	11,1			283 . 57 . 11,03	G.
	(b) Spica R. M..........	351 . 45	4 . 21,3	17,0	20,0	15,5	13,3	15,3	11,360	– 26,53	351 . 48 . 49,94	G.
	Spica	296 . 45	2 . 38,2	35,3	33,7	33,2	28,2	34,0			296 . 47 . 33,40	G.
	(c) Venus S.L.	299 . 30	1 . 52,0	50,0	48,9	46,2	43,7	46,0			299 . 31 . 47,55	G.
Dec. 10	☉ S.L. M............	309 . 40	4 . 13,8	11,0	11,8	8,4	6,4	7,1	16,730	– 2 . 18,46	309 . 41 . 50,71	G.
	☉ N.L...............	309 . 5	4 . 32,3	28,1	29,7	26,5	26,0	26,4			309 . 9 . 27,53	G.
	α Lyræ R. M.......	40 . 40	4 . 16,0	13,3	12,8	9,0	7,0	10,0	11,411	– 27,59	40 . 43 . 44,18	G.
	α Lyræ	247 . 50	2 . 44,3	38,0	38,1	38,8	34,3	39,3			247 . 52 . 38,43	G.
Dec. 12	Venus S.L...........	300 . 35	4 . 46,3	47,4	43,5	44,0	43,2	42,2			300 . 39 . 43,77	G.
Dec. 13	(d) ☉ N.L. M.	309 . 25	0 . 33,7	35,0	33,8	35,8	32,3	34,4	17,850	– 2 . 41,80	309 . 22 . 52,28	G.
	☉ S.L................	309 . 55	0 . 15,6	17,3	17,8	20,4	15,3	17,7			309 . 55 . 17,30	G.
	Uranus	298 . 15	1 . 46,4	50,8	49,2	50,4	47,4	47,9			298 . 16 . 48,43	G.
	(e) ☽ S.L................	302 . 25	0 . 13,7	15,4	16,8	16,9	15,5	16,3		– 8,28	302 . 25 . 7,45	G.
	☽ S.L. M.............	302 . 25	0 . 13,7	15,4	16,8	16,9	15,5	16,3	10,255	– 3,58 – 4,14	302 . 25 . 8,01	G.
	☽ S.L. M............	302 . 25	0 . 13,7	15,4	16,8	16,9	15,5	16,3	10,436	– 7,27	302 . 25 . 8,46	G.
	☽ S.L. M............	302 . 25	0 . 13,7	15,4	16,8	16,9	15,5	16,3	10,616	– 10,92 + 4,14	302 . 25 . 8,95	G.
	☽ S.L. M............	302 . 25	0 . 13,7	15,4	16,8	16,9	15,5	16,3	10,770	– 14,12 + 8,28	302 . 25 . 9,89	G.
	δ Aquarii............	303 . 5	4 . 39,4	45,2	42,8	41,8	42,5	41,7			303 . 9 . 41,58	G.
	ψ^3 Aquarii..........	296 . 55	4 . 7,1	13,0	10,8	10,5	9,4	9,3			296 . 59 . 9,43	G.
	(f) β Urs. Min. SP. R. M...........	107 . 15	1 . 13,4	16,2	16,0	17,3	16,0	17,3	14,366	– 1 . 29,19 + 0,55	107 . 14 . 47,21	G.
	β Urs. Min. SP....	181 . 20	1 . 8,5	11,0	12,0	11,4	11,3	12,5			181 . 21 . 10,95	G.
	σ Persei R. M......	49 . 30	1 . 33,0	37,7	32,8	35,5	34,0	36,0	11,970	– 39,24	49 . 30 . 55,38	G.
	(g) σ Persei..............	239 . 0	4 . 58,7	61,0	61,0	62,4	59,6	62,6			239 . 5 . 0,88	G.
	(h) Venus S.L.	301 . 0	1 . 29,2	30,8	31,0	31,4	29,4	31,0			301 . 1 . 30,25	G.
Dec. 14	γ Ceti R. M.........	4 . 35	3 . 26,3	32,0	29,8	29,8	30,0	28,6	8,707	+ 28,76	4 . 38 . 57,69	G.
	γ Ceti	283 . 55	1 . 53,2	59,9	57,2	58,0	55,0	55,8			283 . 56 . 56,25	G.
	α Ceti R. M.........	5 . 30	2 . 10,8	17,5	14,8	14,5	13,7	14,0	7,920	+ 45,17	5 . 32 . 59,07	G.
	α Ceti	283 . 0	2 . 52,6	59,8	57,1	55,5	54,1	54,4			283 . 2 . 55,18	G.
	Arcturus R. M.....	22 . 5	3 . 37,8	42,8	39,7	40,0	37,4	39,8	12,840	– 57,38	22 . 7 . 41,69	G.
	Arcturus.............	266 . 25	3 . 7,5	10,7	11,8	10,3	7,8	7,3			266 . 28 . 8,80	G.
	(i) Venus S.L.	301 . 20	3 . 8,4	12,2	12,7	11,0	8,0	8,3			301 . 23 . 9,67	G.
Dec. 15	☉ N.L. M.	309 . 30	2 . 11,3	16,1	17,3	14,9	13,0	13,3	17,950	– 2 . 43,88	309 . 29 . 30,12	G.
	☉ S.L................	310 . 0	1 . 51,8	56,0	55,4	53,7	53,0	51,9			310 . 1 . 53,38	G.
	(j) α Lyræ R. M........	40 . 40	4 . 10,2	15,8	13,7	12,8	10,8	11,1	12,320	– 46,55	40 . 43 . 25,27	G.
	α Lyræ............ ..	247 . 50	2 . 25,7	28,0	23,8	28,9	23,2	27,9			247 . 52 . 25,92	G.
	α Aquilæ R. M.....	10 . 30	3 . 15,9	20,4	17,7	20,4	16,8	18,4	12,294	– 46,01	10 . 32 . 31,79	G.
	α Aquilæ	278 . 0	3 . 19,9	25,1	21,9	25,0	19,4	22,1			278 . 3 . 21,77	G

(a) At the 5th wire.
(b) Not good.
(c) Ill-defined.
(d) Before this observation the screws of the axis were turned to bring the instrument nearer to the meridian, the position of the wire-frame was corrected, and the microscopes adjusted.

(e) At the five wires.
(f) At the 2d wire.
(g) No correction for runs.
(h) Dancing.
(i) Very unsteady.
(j) Beautiful.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N.P.D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	64. 1.12,70	28,826	39,4	38,1	1.57,64	0,38			101.50.18,24	Uranus.
12,31	−3.25.49,71	28,800	37,2	36,2	3,46				34.21.15,11	α Cassiopeiæ R.
	−3.25.48,75								34.21.16,07	α Cassiopeiæ.
12,38	−7.37.11,25				7,73				30. 9.49,30	γ Cassiopeiæ R.
	−7.37.10,16								30. 9.50,39	γ Cassiopeiæ.
11,30	32.11.39,67	28,796	37,7	36,5	36,33				69.59.24,28	β Arietis R.
	32.11.38,60								69.59.23,21	β Arietis.
11,89	49.38.59,09		37,1		1. 7,85				87.27.15,22	γ Ceti R.
	49.38.59,20								87.27.15,33	γ Ceti.
11,67	62.29.21,89	29,040	37,8	36,3	1.51,37				100.18.21,54	Spica R.
	62.29.21,57								100.18.21,22	Spica.
	65.13.35,72	29,060	37,6	36,8	2. 5,50	6,65	10,765	7,25	103. 2.35,60	Venus.
	75.23.38,88	29,092	40,0	40,3	3.38,43	8,41		16.16,20	112.58. 0,98	⊙.
	74.51.15,70				3.30,54	8,39			112.58. 2,33	⊙.
11,31	13.34.27,65		40,4	40,4	13,97				51.21.49,90	α Lyræ R.
	13.34.26,60								51.21.48,85	α Lyræ.
	66.21.31,94	29,122	46,5	46,5	2. 9,86	6,60	10,730	6,86	104.10.36,62	Venus.
	75. 4.53,67	29,106	47,7	48,0	3.30,47	8,40		16.16,50	113.11.40,52	⊙.
	75.37.18,69				3.38,46	8,42			113.11.40,51	⊙.
	63.58.49,82	29,100	44,8	44,1	1.57,07	0,38			101.47.54,79	Uranus.
	68. 7. 8,84								104.45.55,97	☽.
	68. 7. 9,40								104.45.56,53	☽.
	68. 7. 9,85				2.21,98	54.37,70		16. 5,43	104.45.56,98	☽.
	68. 7.10,34								104.45.57,47	☽.
	68. 7.11,28								104.45.58,41	☽.
	68.51.42,97		44,0	43,2	2.27,67				106.41.18,94	δ Aquarii.
	62.41.10,82		43,5	42,8	1.51,03				100.30.10,13	ψ^3 Aquarii.
59,08	−52.56.48,60		40,8	40,0	1.16,56				−15.10.56,88	β U. Min. SP. R.
	−52.56.47,66								−15.10.55,94	β Urs. Min. SP.
58,13	4.47. 3,23				4,85				42.34.16,36	σ Persei R.
	4.47. 2,27								42.34.15,40	σ Persei.
	66.43.31,64	29,128	39,0	38,7	2.14,32	6,59	10,751	7,07	104.32.40,58	Venus.
56,97	49.38.58,45	29,406	42,4	41,9	1. 8,51				87.27.15,24	γ Ceti R.
	49.39. 0,11								87.27.16,90	γ Ceti.
57,13	48.44.57,07				1. 6,38				86.33.11,73	α Ceti R.
	48.44.59,04								86.33.13,70	α Ceti.
55,25	32.10.14,45	29,832	39,8	37,7	37,51				69.58. 0,24	Arcturus R.
	32.10.12,66								69.57.58,45	Arcturus.
	67. 5.13,53	29,868	38,3	37,4	2.20,50	6,57	10,760	7,16	104.54.28,58	Venus.
	75.11.33,98	29,900	39,7	39,9	3.41,58	8,41		16.16,60	113.18.32,03	⊙.
	75.43.57,24				3.50,07	8,43			113.18.30,56	⊙.
55,60	13.34.30,87	29,910	40,5	40,6	14,36				51.21.53,51	α Lyræ R.
	13.34.29,78								51.21.52,42	α Lyræ.
56,78	43.45.24,35				56,87				81.33.29,50	α Aquilæ R.
	43.45.25,63								81.33.30,78	α Aquilæ.

Coincidence of Micrometer Wire with fixed Wire = 10r,087 at middle wire. One revolution = 20″,843.
Correction for Runs = − 4″,2.
Adopted Zenith Point = 234°. 18′. 11″,83. From Dec. 13. = 234°. 17′. 58″,61. From Dec. 14. = 234°. 17′. 56″,14.
Assumed Co-latitude = 37°. 47′. 8″,28.
Change of Zenith point on altering the position of the circle, and adjusting the microscopes.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Dec. 15	ψ^3 Aquarii..........	296.55	4. 1,3	7,8	5,8	4,8	2,0	4,3			296.59. 3,77	G.
	p Piscium...........	290.55	1.57,1	62,2	61,5	59,9	56,8	59,3			290.56.59,20	G.
	Arcturus R. M.	22. 5	3.35,0	38,8	37,4	37,4	35,7	36,2	12,787	- 56,28	22. 7.39,97	G.
	Arcturus............	266.25	3. 8,5	12,6	12,3	11,9	7,4	11,2			266.28.10,23	G.
	Venus S.L..........	301.40	4.33,6	39,0	37,9	37,2	34,9	34,7			301.44.35,58	G.
	α Coronæ Borealis R. M............	29.20	1.16,5	19,0	18,1	21,8	16,9	21,0	9,640	+ 9,32	29.21.28,02	G.
	(*a*) α Coronæ Borealis..	259.10	4.20,8	25,4	23,3	25,3	20,0	23,8		+ 0,31	259.14.22,79	G.
Dec. 16	(*b*) ⊙ S.L. M.	310. 5	1.13,0	17,5	14,6	21,2	14,5	16,9	14,686	- 1.35,86	310. 4.40,26	G.
	⊙ N.L.	309.30	2.12,0	16,8	15,3	18,3	13,3	17,0			309.32.15,15	G.
	α Lyræ R. M.	40.40	4.10,1	15,8	12,2	15,9	9,2	14,0	12,340	- 46,96	40.43.25,32	G.
	α Lyræ	247.50	2.24,6	27,7	24,8	29,3	23,8	26,8			247.52.25,83	G.
	Uranus	298.10	4.44,2	53,0	47,8	50,0	45,1	47,1			298.14.47,20	G.
	δ Aquarii	303. 5	4.32,8	41,0	35,8	37,7	33,6	36,4			303. 9.35,58	G.
	α Pegasi R: M... ..	16.25	1.16,9	23,1	18,7	24,2	17,2	23,0	12,150	- 43,00	16.25.37,33	G.
	α Pegasi	272.10	0.14,4	18,3	16,0	19,4	15,0	19,3			272.10.17,03	G.
	λ Draconis SP. R. M.	111.50	0.15,3	18,8	17,3	21,4	15,8	20,5	11,105	- 21,22	111.49.56,93	G.
	(*c*) λ Draconis SP......	176.45	1.13,8	19,4	18,0	19,0	16,8	19,6	11,105	- 21,22 - 0,42	176.45.55,94	G.
	(*d*) ☽ S.L................	283.35	0.30,0	34,1	32,0	33,5	30,8	33,4		- 8,40	283.35.23,83	G.
	☽ S.L. M...........	283.35	0.30,0	34,1	32,0	33,5	30,8	33,4	10,319	- 4,93 - 4,20	283.35.23,10	G.
	☽ S.L. M...........	283.35	0.30,0	34,1	32,0	33,5	30,8	33,4	10,570	- 10,07	283.35.22,16	G.
	☽ S.L. M...........	283.35	0.30,0	34,1	32,0	33,5	30,8	33,4	10,760	- 13,93 + 4,20	283.35.22,50	G.
	☽ S.L. M...........	283.35	0.30,0	34,1	32,0	33,5	30,8	33,4	10,937	- 17,58 + 8,40	283.35.23,05	G.
	μ Piscium...........	281.10	1.36,6	43,4	39,6	42,3	38,3	41,4			281.11.40,03	G.
	ν Piscium...........	281.50	0. 3,6	8,1	7,3	7,9	3,9	8,0			281.50. 6,47	G.
	α Arietis R. M.....	24.45	1.23,8	30,0	25,8	28,7	24,5	28,3	8,380	+ 35,58	24.47. 2,21	G.
	α Arietis	263.45	3.46,0	51,4	48,8	49,3	46,7	49,3			263.48.48,05	G.
	β Urs. Min. SP. R. M...........	107.15	1.16,5	21,1	19,0	22,3	17,6	20,4	14,714	- 1.36,45	107.14.42,85	G.
	β Urs. Min. SP.....	181.20	1. 7,0	10,8	12,4	10,0	9,5	9,5			181.21. 9,72	G.
	Venus S.L.	302. 5	0.33,0	36,8	34,5	38,0	34,0	36,9			302. 5.35,45	G.
Dec. 17	⊙ N.L. M.	309.35	1. 8,8	12,8	12,3	14,4	8,7	13,0	15,210	- 1.46,78	309.34.24,74	G.
	⊙ S.L.	310. 5	1.47,0	51,8	49,4	51,8	46,8	48,7			310. 6.49,00	G.
	α Lyræ R. M.	40.40	4. 8,3	13,0	11,4	12,5	9,1	11,3	12,278	- 45,67	40.43.24,68	G.
	α Lyræ	247.50	2.25,0	28,8	26,5	30,4	23,8	28,3			247.52.26,78	G.
Dec. 18	(*e*) ☽ S.L.	272. 5	0.10,0	17,2	14,4	16,5	13,3	15,0		+ 3,58	272. 5.17,95	G.
	☽ S.L. M.	272. 5	0.10,0	17,2	14,4	16,5	13,3	15,0	10,215	- 2,56 + 7,16	272. 5.18,97	G.
Dec. 19	γ Cassiopeiæ R. M..	61.55	0.12,0	18,0	15,2	17,0	14,8	16,9	10,468	- 7,94	61.55. 7,68	G.
	γ Cassiopeiæ....	226.40	0.41,3	48,0	45,3	47,0	44,5	46,5			226.40.45,35	G.
	Polaris R. M........	90.30	1.16,1	22,4	21,0	20,8	18,8	21,0	10,908	- 17,11	90.31. 2,74	G.
	Polaris...............	198. 0	4.47,1	55,1	50,9	52,0	49,5	51,2			198. 4.50,37	G.
	μ Piscium...........	281.10	1.37,7	45,1	41,5	43,0	40,0	41,9			281.11.41,33	G.
	ν Piscium...........	281.50	0. 3,0	8,5	7,3	7,8	5,5	8,0			281.50. 6,67	G.
	Venus S.L..........	303. 5	1.29,0	32,1	31,0	32,3	30,0	30,8			303. 6.30,68	G.

(*a*) At the 5th wire.

(*b*) Bad to observe.

(*c*) At the 4th wire; on the micrometer wire.

(*d*) At the five wires: unsteady. The position of the wire-frame was finally corrected before this observation. An equatoreal star now moves along the fixed wire exactly.

(*e*) At the 4th and 5th wires. The 1st and 2d wires lost by clouds, and the 3d by the failure of the clamp.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	62 . 41 . 7,63	29,872	37,8	35,3	1 . 55,74				100 . 30 . 11,65	ψ³ Aquarii.
	56 . 39 . 3,06		37,1	34,9	1 . 31,05				94 . 27 . 42,39	*p* Piscium.
55,10	32 . 10 . 16,17	29,578	39,4	38,2	37,15				69 . 58 . 1,60	Arcturus R.
	32 . 10 . 14,09								69 . 57 . 59,52	Arcturus.
	67 . 26 . 39,44	29,590	39,0	38,7	2 . 21,23	6,55	10,774	7,31	105 . 15 . 55,09	Venus.
55,41	24 . 56 . 28,12	29,600	39,4	39,7	27,41				62 . 44 . 3,81	α Cor. Bor. R.
	24 . 56 . 26,65								62 . 44 . 2,34	α Coronæ Bor.
	75 . 46 . 44,12	29,626	42,2	43,2	3 . 47,12	8,43		16 . 16,70	113 . 21 . 14,39	⊙.
	75 . 14 . 19,01				3 . 38,73	8,41			113 . 21 . 14,31	⊙.
55,58	13 . 34 . 30,82	29,650	42,8	43,8	14,14				51 . 21 . 53,24	α Lyræ R.
	13 . 34 . 29,69								51 . 21 . 52,11	α Lyræ.
	63 . 56 . 51,06	29,750	42,3	42,1	2 . 0,02	0,38			101 . 45 . 58,98	Uranus.
	68 . 51 . 39,44	29,774	41,8	41,1	2 . 31,75				106 . 41 . 19,47	δ Aquarii.
57,18	37 . 52 . 18,81				45,95				75 . 40 . 13,04	α Pegasi R.
	37 . 52 . 20,89								75 . 40 . 15,12	α Pegasi.
56,44	− 57 . 32 . 0,79				1 . 32,65				− 19 . 46 . 25,16	λ Draconis SP. R.
	− 57 . 32 . 0,20								− 19 . 46 . 24,57	λ Draconis SP.
	49 . 17 . 27,69	29,840	40,8	40,0					86 . 7 . 32,97	☽.
	49 . 17 . 26,96								86 . 7 . 32,24	☽.
	49 . 17 . 26,02				1 . 8,92	42 . 45,46		15 . 26,46	86 . 7 . 31,30	☽.
	49 . 17 . 26,36								86 . 7 . 31,64	☽.
	49 . 17 . 26,91								86 . 7 . 32,19	☽.
	46 . 53 . 43,89				1 . 3,37				84 . 41 . 55,54	μ Piscium.
	47 . 32 . 10,33				1 . 4,81				85 . 20 . 23,42	ν Piscium.
55,13	29 . 30 . 53,93	29,860	40,3	39,2	33,69				67 . 18 . 35,90	α Arietis R.
	29 . 30 . 51,91								67 . 18 . 33,88	α Arietis.
56,28	− 52 . 56 . 46,71	29,876	39,8		1 . 18,72				− 15 . 10 . 57,15	β U. Min. SP. R.
	− 52 . 56 . 46,42								− 15 . 10 . 56,86	β Urs. Min. SP.
	67 . 47 . 39,31	30,000	37,5	36,8	2 . 26,24	6,54	10,769	7,25	105 . 37 . 0,04	Venus.
	75 . 16 . 28,60	30,002	40,9	41,4	3 . 42,88	8,41		16 . 16,80	113 . 23 . 28,15	⊙.
	75 . 48 . 52,86				3 . 51,46	8,43			113 . 23 . 27,37	⊙.
55,73	13 . 34 . 31,46	29,984	42,0	42,5	14,34				51 . 21 . 54,08	α Lyræ R.
	13 34 . 30,64								51 . 21 . 53,26	α Lyræ.
	37 . 47 . 21,81	30,040	47,4	47,8	45,59	33 . 46,46		15 . 6,60	74 . 46 . 22,62	☽.
	37 . 47 . 22,83								74 . 46 . 23,64	☽.
56,52	− 7 . 37 . 11,54	29,988	47,5	46,2	7,88				30 . 9 . 48,86	γ Cassiopeiæ R.
	− 7 . 37 . 10,79								30 . 9 . 49,61	γ Cassiopeiæ.
56,56	− 36 . 13 . 6,60				43,12				1 . 33 . 18,56	Polaris R.
	− 36 . 13 . 5,77								1 . 33 . 19,39	Polaris.
	46 . 53 . 45,19		46,8	45,8	1 . 2,92				84 . 41 . 56,39	μ Piscium.
	47 . 32 . 10,53				1 . 4,35				85 . 20 . 23,16	ν Piscium.
	68 . 48 . 34,54	30,110	44,5	43,0	2 . 32,43	6,49	10,728	6,79	106 . 38 . 1,97	Venus.

Coincidence of Micrometer Wire with fixed Wire = $10^{\mathrm{r}},087$ at middle wire. One revolution = 20″,843.

Correction for Runs = − 4″,2. From Dec. 18. = − 3″,7.

Adopted Zenith Point = 234° . 17′ . 56″,14.

Assumed Co-latitude = 37° . 47′ . 8″,28.

Dec. 19. 7^{h} and 21^{h}, the runs were found to be respectively − 4″,7 and − 2″,7. The mean is used. The same day the coincidences of the wires were taken, and found not to be sensibly altered.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Dec. 20	(a) ⊙ S.L. M.	310.10	2.15,2	20,6	19,0	19,3	18,2	18,7	14,800	– 1.38,23	310.10.39,99	G.
	⊙ N.L.	309.35	3.15,3	19,1	19,0	18,2	16,0	16,5			309.38.16,95	G.
	α Lyræ R. M.	40.40	4.13,4	18,3	17,0	17,0	13,8	15,8	12,585	– 52,08	40.43.23,27	G.
	(b) α Lyræ	247.50	2.25,1	27,7	26,4	28,4	25,8	26,0		+ 0,48	247.52.26,75	G.
	α Aquilæ R. M.	10.30	3.13,4	17,2	15,7	17,2	14,6	15,5	12,195	– 43,94	10.32.31,26	G.
	α Aquilæ	278. 0	3.19,5	26,3	22,8	23,4	22,2	21,5			278. 3.22,20	G.
	(c) ☽ N.L. M.	263. 5	0.27,0	29,0	32,0	32,0	28,1	30,2	12,290	– 46,01 – 4,70	263. 4.38,96	G.
	☽ N.L. M.	263. 5	0.27,0	29,0	32,0	32,0	28,1	30,2	12,370	– 47,68 – 2,35	263. 4.39,64	G.
	☽ S.L.	263.30	4.49,5	54,0	55,9	51,9	50,0	50,9			263.34.51,43	G.
	☽ S.L. M.	263.30	4.49,5	54,0	55,9	51,9	50,0	50,9	10,225	– 2,77 + 2,35	263.34.51,01	G.
	☽ S.L. M.	263.30	4.49,5	54,0	55,9	51,9	50,0	50,9	10,350	– 5,36 + 4,70	263.34.50,77	G.
	(a) Aldebaran R. M.	18.10	4.41,6	48,0	48,3	45,0	44,9	43,0	5,249	+ 1.40,84	18.16.25,39	G.
	Aldebaran	270.15	4.23,4	27,0	28,4	26,4	25,7	25,0			270.19.25,43	G.
	τ Tauri	263.50	1.48,0	50,0	54,0	50,5	49,2	50,0			263.51.50,07	G.
	Capella R. M.	47.50	4.17,0	22,0	21,5	19,3	19,8	18,1	8,850	+ 25,79	47.54.44,87	G.
	Capella	240.40	1. 5,7	6,3	9,7	7,3	6,3	7,4			240.41. 6,98	G.
Dec. 21	α Cassiopeiæ R. M.	57.40	3.16,8	19,8	20,1	20,4	19,4	18,7	8,780	+ 27,24	57.43.46,04	G.
	α Cassiopeiæ	230.50	2. 4,6	7,3	8,7	7,7	8,0	6,3			230.52. 6,83	G.
	γ Cassiopeiæ R. M.	61.55	0.33,7	35,9	36,8	37,0	38,0	36,9	11,446	– 28,32	61.55. 8,00	G.
	γ Cassiopeiæ	226.40	0.42,5	45,4	48,3	48,0	46,0	45,0			226.40.45,78	G.
	Polaris R. M.	90.30	1. 4,3	8,0	10,0	10,2	9,3	7,4	10,330 1. 0.15	– 5,06 – 0,21	90.31. 2,80	G.
	Polaris	198. 0	4.48,5	50,0	54,0	53,2	53,4	51,3	1. 0.40	+ 0,12	198. 4.51,25	G.
Dec. 22	Capella R. M.	47.50	4.11,4	16,3	14,7	15,0	14,7	13,4	8,634	+ 30,28	47.54.44,01	G.
	Capella	240.40	1. 2,7	4,9	6,7	5,5	5,2	5,0			240.41. 4,87	G.
Dec. 23	⊙ N.L. M.	309.35	4.12,3	18,0	18,0	14,2	13,4	13,2	13,874	– 1.18,94	309.37.55,68	G.
	⊙ S.L.	310.10	0.18,0	20,2	22,3	20,8	19,0	21,0			310.10.20,20	G.
	α Lyræ R. M.	40.40	4.13,5	18,8	19,4	15,5	14,8	14,7	12,602	– 52,42	40.43.23,46	G.
	α Lyræ	247.50	2.26,5	30,8	28,8	29,0	28,9	28,3			247.52.28,58	G.
	Uranus	298. 5	4.35,1	40,0	42,3	37,5	38,0	36,7			298. 9.38,00	G.
	ε Geminorum R. M.	27.20	2.14,4	17,8	19,0	15,0	16,0	16,4	8,557	+ 31,89	27.22.48,19	G.
	ε Geminorum	261.10	3. 0,6	5,5	8,0	3,0	4,0	3,1			261.13. 3,87	G.
	(d) ☽ N.L.	259.15	3.57,5	62,0	65,4	59,0	58,7	59,5		+ 1,26	259.19. 1,39	G.
	☽ N.L. M.	259.15	3.57,5	62,0	65,4	59,0	58,7	59,5	10,027	+ 1,17 + 0,63	259.19. 1,93	G.
	☽ N.L. M.	259.15	3.57,5	62,0	65,4	59,0	58,7	59,5	9,988	+ 2,07	259.19. 2,20	G.
	☽ N.L. M.	259.15	3.57,5	62,0	65,4	59,0	58,7	59,5	9,959	+ 2,77 – 0,63	259.19. 2,27	G.
	☽ N.L. M.	259.15	3.57,5	62,0	65,4	59,0	58,7	59,5	9,952	+ 2,93 – 1,26	259.19. 1,80	G.
Dec. 24	(e) ⊙ S.L. M.	310. 5	4.42,8	48,2	49,9	45,8	45,4	42,4	11,428	– 28,13	310. 9.17,35	G.
	⊙ N.L.	309.35	1.49,4	54,1	57,7	53,6	52,1	52,8			309.36.53,18	G.
	α Lyræ R. M.	40.40	4.11,7	17,3	19,8	13,2	15,2	12,4	12,594	– 52,26	40.43.22,44	G.
	α Lyræ	247.50	2.25,9	30,8	30,4	28,7	30,0	27,3			247.52.28,72	G.

(a) Not good.
(b) At the 5th wire.
(c) At the five wires: rather misty. The correction applied to the N.L. for defect of illumination = – 0″,47.
(d) At the five wires.
(e) Unsteady and badly defined.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
	75 . 52 . 43,85	30,125	44,8	44,3	3 . 52,00	8,44		16 . 17,00	113 . 27 . 18,69	☉.
	75 . 20 . 20,81				3 . 43,38	8,42			113 . 27 . 21,05	☉.
55,01	13 . 34 . 32,87				14,35				51 . 21 . 55,50	α Lyræ R.
	13 . 34 . 30,61								51 . 21 . 53,24	α Lyræ.
56,73	43 . 45 . 24,88	30,132	44,5	44,1	56,88				81 . 33 . 30,04	α Aquilæ R.
	43 . 45 . 26,06								81 . 33 . 31,22	α Aquilæ.
	28 . 46 . 42,82	30,160	38,5	36,7	33,18	26 . 5,00			66 . 23 . 11,58	☽.
	28 . 46 . 43,50								66 . 23 . 12,26	☽.
	29 . 16 . 55,29							14 . 52,77	66 . 23 . 14,45	☽.
	29 . 16 . 54,87				33,88	26 . 30,23			66 . 23 . 14,03	☽.
	29 . 16 . 54,63								66 . 23 . 13,79	☽.
55,41	36 . 1 . 30,75				43,92				73 . 49 . 22,95	Aldebaran R.
	36 . 1 . 29,29								73 . 49 . 21,49	Aldebaran.
	29 . 33 . 53,93				34,27				67 . 21 . 36,48	τ Tauri.
55,93	6 . 23 . 11,27		38,8	37,4	6,75				44 . 10 . 26,30	Capella R.
	6 . 23 . 10,84								44 . 10 . 25,87	Capella.
56,44	− 3 . 25 . 49,90	30,190	43,5	42,8	3,58				34 . 21 . 14,80	α Cassiopeiæ R.
	− 3 . 25 . 49,31								34 . 21 . 15,39	α Cassiopeiæ.
56,89	− 7 . 37 . 11,86				7,99				30 . 9 . 48,43	γ Cassiopeiæ R.
	− 7 . 37 . 10,36								30 . 9 . 49,93	γ Cassiopeiæ.
57,03	− 36 . 13 . 6,66				43,72				1 . 33 . 17,90	Polaris R.
	− 36 . 13 . 4,89								1 . 33 . 19,67	Polaris.
54,44	6 . 23 . 12,13	29,860	46,0	45,6	6,58				44 . 10 . 26,99	Capella R.
	6 . 23 . 8,73								44 . 10 . 23,59	Capella.
	75 . 19 . 59,54	29,737	37,7	36,7	3 . 44,00	8,42		16 . 17,20	113 . 27 . 0,60	☉.
	75 . 52 . 24,06				3 . 52,65	8,44			113 . 26 . 59,35	☉.
56,02	13 . 34 . 32,68				14,39				51 . 21 . 55,35	α Lyræ R.
	13 . 34 . 32,44								51 . 21 . 55,11	α Lyræ.
	63 . 51 . 41,86	29,650	35,7	34,5	2 . 1,07	0,37			101 . 40 . 50,84	Uranus.
56,03	26 . 55 . 7,95	29,568	33,8	32,5	30,34				64 . 42 . 46,57	ε Geminorum R.
	26 . 55 . 7,73								64 . 42 . 46,35	ε Geminorum.
	25 . 1 . 5,25			32,7					62 . 40 . 46,28	☽.
	25 . 1 . 5,79								62 . 40 . 46,82	☽.
	25 . 1 . 6,06				27,88	22 . 37,59		14 . 42,46	62 . 40 . 47,09	☽.
	25 . 1 . 6,13								62 . 40 . 47,16	☽.
	25 . 1 . 5,66								62 . 40 . 46,69	☽.
	75 . 51 . 21,21	29,674	35,0	35,0	3 . 52,74	8,44		16 . 17,20	113 . 25 . 56,59	☉.
	75 . 18 . 57,04				3 . 44,09	8,42			113 . 25 . 58,19	☉.
55,58	13 . 34 . 33,70				14,41				51 . 21 . 56,39	α Lyræ R.
	13 . 34 . 32,58								51 . 21 . 55,27	α Lyræ.

Coincidence of Micrometer Wire with fixed Wire $=10^{r},087$ at middle wire. One revolution =20″,843.
Correction for Runs = − 3″,7. From Dec. 23. = − 1″,7.
Adopted Zenith Point = 234° . 17′ . 56″,14.
Assumed Co-latitude = 37° . 47′ . 8″,28.
Runs taken Dec. 23. 22^{h}, the temperature being low.
Dec. 21. 7^{h}, Molyneux fast on Hardy $1^{m}.45^{s}$.

Month and Day.	NAME OF STAR or PLANET.	Pointer.	Microscopes.						Micrometer, or Time by Molyneux.	Correction for Microm. or Time.	Concluded reading of Circle.	Observer.
			A	B	C	D	E	F				
		° ′	′ ″	″	″	″	″	″	r. h. m. s.	′ ″	° ′ ″	
Dec. 24	(a) α Aquilæ R. M.	10.30	3.14,2	21,2	22,0	18,6	19,5	16,8	12,350	−47,17	10.32.31,36	G.
	α Aquilæ	278. 0	3.18,8	25,1	26,5	22,8	22,2	21,0			278. 3.22,55	G.
	(b) Castor R. M.	34.20	0. 8,5	10,5	15,2	8,1	11,3	10.0	11,035	−19,76	34.19.50,84	G.
	Castor	254.15	0.59,7	62,8	67,3	61,7	62,0	60,8			254.16. 2,33	G.
	Procyon R. M.	7.40	3.14,4	20,0	22,2	15,2	18,8	16,0	6,638	+1.11,89	7.44.29,47	G.
	Procyon	280.50	1.20,3	26,0	27,3	23,8	25,5	23,8			280.51.24,37	G.
	(e) ☽ N.L. M.	260.45	4.15,0	19,3	21,7	16,5	16,7	16,0	14,193	−1.25,68 +3,22	260.47.54,82	G.
	☽ N.L. M.	260.45	4.15,0	19,3	21,7	16,5	16,7	16,0	14,148	−1.24,72 +1,61	260.47.54,17	G.
	☽ SL.	261.15	2.43,2	49,1	52,0	44,8	47,5	45,8			261.17.46,90	G.
	☽ S.L. M.	261.15	2.43,2	49,1	52,0	44,8	47,5	45,8	10,015	+1,61 −1,61	261.17.46,90	G.
	☽ S.L. M.	261.15	2.43,2	49,1	52,0	44,8	47,5	45,8	9,953	+2,91 −3,22	261.17.46,59	G.

(a) Faint.
(b) Not good.

(c) At the five wires. Both limbs uneven. Correction for defect of illumination of S.L. = + 0″,02.

Sec. of apparent Zenith Point.	Apparent Zenith Distance.	Barom.	Thermometer.		Refraction.	Parallax.	Micrometer for opposite Limb.	Semi-diameter.	Geoc. N. P. D. of Center.	NAME OF STAR or PLANET.
			Attach.	Free.						
″	° ′ ″	Inch.	°	°	′ ″	′ ″	r	′ ″	° ′ ″	
56,96	43 . 45 . 24,78	29,680	35,2	34,5	57,15				81 . 33 . 30,21	*a* Aquilæ R.
	43 . 45 . 26,41								81 . 33 . 31,84	*a* Aquilæ.
56,59	19 . 58 . 5,30	29,768	30,8	28,9	22,03				57 . 45 . 35,61	Castor R.
	19 . 58 . 6,19								57 . 45 . 36,50	Castor.
56,92	46 . 33 . 26,67				1 . 3,95				84 . 21 . 38,90	Procyon R.
	46 . 33 . 28,23								84 . 21 . 40,46	Procyon.
	26 . 29 . 58,68				30,23	23 . 52,13			64 . 8 . 27,07	☽.
	26 . 29 . 58,03								64 . 8 . 26,42	☽.
	26 . 59 . 50,76							14 . 42,01	64 . 8 . 30,65	☽.
	26 . 59 . 50,76				30,89	24 . 17,29			64 . 8 . 30,65	☽.
	26 . 59 . 50,45								64 . 8 . 30,34	☽.

Coincidence of Micrometer Wire with fixed Wire = 10^{r},087 at middle wire. One revolution = 20″,843.
Correction for Runs = − 1″,7.
Adopted Zenith Point = 234° . 17′ . 56″,14.
Assumed Co-latitude = 37° . 47′ . 8″,28.

THE numbers in the following Tables are formed by subtracting the observed zenith distance of the Sun's or Moon's N.L., corrected for refraction and parallax, from that of the S.L. When both limbs of the Moon are not equally illuminated, her diameter is corrected as is described in the Introduction.

VERTICAL DIAMETERS *of the* SUN, *deduced from each Day's Observation, and Corrected for Refraction and Parallax.*

Day of Observation. 1836.	Apparent Diameter.	Day of Observation. 1836.	Apparent Diameter.	Day of Observation. 1836.	Apparent Diameter.	Day of Observation. 1836.	Apparent Diameter.
	′ ″		′ ″		′ ″		′ ″
March 24	32 . 5,30	June 2	31 . 37,10	Aug. 9	31 . 37,57	Oct. 17	32 . 11,11
		6	31,22	10	37,89	19	10,48
April 2	1,78	8	29,37	11	37,31	20	12,53
4	0,82	9	33,67	12	38,21	21	13,07
5	31 . 57,60	11	31,83	13	40,90	22	12,31
8	58,23	14	31,02	17	38,83	31	15,62
15	52,15	15	32,50	18	39,91		
16	52,10	16	31,06	22	41,19		
21	49,33	17	32,88	24	42,87	Nov. 5	20,21
22	51,85	18	30,91	27	45,14	7	20,04
30	49,03	20	32,27	29	49,02	8	23,46
		23	29,06	31	46,87	9	19,33
May 2	47,30	24	31,27			10	23,09
3	43,07	25	31,40			14	24,58
7	43,67	28	32,22	Sept. 1	47,24	15	22,85
9	39,50	30	30,25	3	46,60	17	24,38
10	40,98			5	48,68	18	26,42
11	38,94	July 2	33,67	7	50,64	21	26,86
12	42,77	4	31,59	13	52,16	24	28,20
13	39,87	11	34,14	20	56,98	25	27,05
14	38,49	13	32,23	21	55,10		
16	37,77	21	32,96	24	59,21		
17	39,43	22	30,74	28	32 . 2,71	Dec. 3	30,46
18	38,99	23	32,84			8	33,89
19	36,07	28	33,63			10	31,05
20	40,99	29	34,84	Oct. 4	6,32	13	32,99
21	37,09			5	4,17	15	31,73
26	35,51			10	6,70	16	33,48
27	37,17	Aug. 3	35,86	11	6,08	17	32,82
28	34,06	4	33,62	12	7,13	20	31,64
30	35,44	6	35,17	13	5,60	23	33,15
31	34,23	8	36,13	14	8,79	24	32,80

VERTICAL DIAMETERS *of the* MOON, *deduced from the Observations of each Day on which both Limbs were observed, and Corrected for Refraction and Parallax.*

Day of Observation. 1836.	Apparent Diameter.	Day of Observation. 1836.	Apparent Diameter.	Day of Observation. 1836.	Apparent Diameter.
	′ ″		′ ″		′ ″
April 2	32 . 25,86	Aug. 21	32 . 38,75	Dec. 20	29 . 47,24
30	32 . 53,23	27	31 . 58,75	24	29 . 27,80

MEAN NORTH POLAR DISTANCES OF STARS

OBSERVED IN THE YEAR 1836,

AS DEDUCED FROM EACH DAY's OBSERVATION;

(WITHOUT CORRECTION FOR THE DISCORDANCE OF ZENITH POINTS,
OR FOR THE ALTERATION OF CO-LATITUDE):

WITH

A CATALOGUE

OF THE

CONCLUDED MEAN NORTH POLAR DISTANCES,

January 1, 1836.

(CORRECTED FOR THE DISCORDANCE OF ZENITH POINTS,
AND FOR THE ALTERATION OF CO-LATITUDE).

t Piscium.	° ′ ″
Oct. 21	88 . 58 . 8,82
22	8,21

α Cassiopeiæ.	° ′ ″
Nov. 3	34 . 21 . 47,32
10	46,61
Dec. 5	46,33
9	47,98
21	48,07

α Cassiopeiæ R.	° ′ ″
Nov. 3	34 . 21 . 46,73
10	46,70
Dec. 5	46,34
9	47,02
21	47,48

α Cassiopeiæ SP.	° ′ ″
March 26	34 . 21 . 45,08
30	48,12
April 7	46,43
9	45,41
11	47,97
May 17	47,32
19	44,26
26	45,74

α Cassiopeiæ SP. R.	° ′ ″
March 26	34 . 21 . 45,76
30	43,75
April 7	46,23
9	47,36
11	48,36
May 17	46,26
19	45,76
26	47,09

δ Piscium.	° ′ ″
Sept. 24	83 . 18 . 31,49
Nov. 14	32,18

m Ceti.	° ′ ″
Sept. 24	92 . 2 . 8,70
Nov. 14	9,80

γ Cassiopeiæ.	° ′ ″
Oct. 21	30 . 10 . 22,54
23	21,96
Nov. 3	22,71
Dec. 9	22,89
19	23,09
21	23,55

γ Cassiopeiæ R.	° ′ ″
Oct. 21	30 . 10 . 21,57
23	21,51
Nov. 3	22,07
Dec. 9	21,80
19	22,34
21	22,05

γ Cassiopeiæ SP.	° ′ ″
April 4	30 . 10 . 21,33
15	20,72

γ Cassiopeiæ SP. R.	° ′ ″
April 4	30 . 10 . 21,22
15	22,78

Polaris.	° ′ ″
April 21	1 . 33 . 55,28
May 6	55,65
11	55,73
12	55,81
13	55,74
16	53,72
17	54,46
19	54,60
June 24	56,90
Sept. 23	54,69
Oct. 13	55,36
19	56,51
21	57,87
22	54,71
23	55,35

Polaris *continued.*	° ′ ″
Nov. 3	1 . 33 . 55,60
5	55,34
10	55,93
12	54,88
14	56,22
Dec. 19	55,23
21	55,86

Polaris R.	° ′ ″
June 24	1 . 33 . 54,47
Sept. 23	54,60
Oct. 13	54,74
19	55,96
21	56,08
22	56,56
23	54,23
Nov. 3	55,10
5	54,24
10	55,35
12	54,71
14	55,02
Dec. 19	54,40
21	54,09

Polaris SP.	° ′ ″
March 26	1 . 33 . 55,73
30	58,06
31	57,12
April 2	54,81
4	56,46
7	54,62
11	54,59
13	56,38
15	54,90
22	54,61
26	56,14
29	54,17
30	58,45
May 6	55,24
9	54,46
10	56,05
11	57,03
12	55,70
13	55,74
17	56,24
19	54,56
20	55,22
21	53,63
26	54,96
27	54,87
June 4	54,55
11	55,10
14	57,36

Polaris SP. *continued.*	° ′ ″
June 18	1 . 33 . 54,79
25	55,57
July 1	57,60
2	53,33
6	55,97
18	55,92
Sept. 24	55,86
28	55,27
Oct. 4	57,43
5	53,51
11	56,03
12	57,71
13	56,11
16	55,82
18	55,66
19	57,64
Nov. 2	54,35
6	54,90
7	54,15
9	55,83
13	54,18
14	54,28
17	53,89
29	55,98
30	55,03
Dec. 2	55,54

Polaris SP. R.	° ′ ″
March 26	1 . 33 . 54,96
30	55,37
31	56,14
April 2	55,96
4	54,80
7	55,91
11	54,23
13	54,47
15	53,85
22	55,45
26	54,48
29	57,39
30	55,75
May 6	55,22
9	56,24
10	55,80
11	54,99
12	55,06
13	54,89
17	54,41
19	56,04
20	55,73
21	58,99
26	55,01
27	53,81
June 4	55,26
11	55,99
14	55,81

Polaris SP. R. *continued.*	
	° ′ ″
June 18	1 . 33 . 55,82
25	55,97
July 1	56,55
2	54,13
6	56,87
18	56,23
Sept. 24	57,01
28	55,01
Oct. 4	55,27
5	58,24
11	56,29
12	56,37
13	56,86
16	56,72
18	55,72
19	56,16
Nov. 2	56,98
6	56,17
7	55,44
9	56,87
13	55,52
14	56,52
17	55,89
29	55,48
30	55,76
Dec. 2	55,24

δ Cassiopeiæ.	
Oct. 22	30 . 37 . 10,61
Nov. 10	12,95

δ Cassiopeiæ R.	
Oct. 22	30 . 37 . 10,54
Nov. 10	12,19

μ Piscium.	
Dec. 16	84 . 42 . 14,26
19	14,93

ν Piscium.	
Dec. 16	85 . 20 . 41,93
19	41,49

ο Piscium.	
Nov. 20	81 . 40 . 14,44
24	13,37

ε Cassiopeiæ SP.	
	° ′ ″
May 10	27 . 8 . 27,41
12	31,42
13	30,16
14	28,30
16	29,81

ε Cassiopeiæ SP. R.	
May 10	27 . 8 . 30,22
12	30,43
13	30,66
14	30,12
16	30,02

β Arietis.	
Nov. 20	69 . 59 . 48,22
Dec. 9	46,19

β Arietis R.	
Nov. 20	69 . 59 . 48,03
Dec. 9	47,26

α Arietis.	
Oct. 25	67 . 18 . 57,31
Nov. 24	57,50
Dec. 16	57,32

α Arietis R.	
Oct. 25	67 . 18 . 57,83
Nov. 24	59,90
Dec. 16	59,34

γ Ceti.	
Dec. 9	87 . 27 . 33,04
14	34,24

γ Ceti R.	
Dec. 9	87 . 27 . 32,93
14	32,58

38 Arietis.	
	° ′ ″
Nov. 20	78 . 14 . 54,20
23	53,74

π Arietis.	
Nov. 20	73 . 13 . 20,72
23	19,05

α Ceti.	
Nov. 20	86 . 33 . 28,29
Dec. 14	30,81

α Ceti R.	
Nov. 20	86 . 33 . 27,20
Dec. 14	28,84

α Persei.	
Nov. 23	40 . 43 . 44,92
Dec. 7	44,82
8	43,82

α Persei R.	
Nov. 23	40 . 43 . 43,59
Dec. 7	44,81
8	42,28

σ Persei.	
Dec. 8	42 . 34 . 39,39
13	38,96

σ Persei R.	
Dec. 8	42 . 34 . 39,68
13	39,92

δ Persei.	
Dec. 8	42 . 44 . 36,89

δ Persei R.	
Dec. 8	42 . 44 . 37,75

Aldebaran.	
	° ′ ″
Dec. 20	73 . 49 . 36,01

Aldebaran R.	
Dec. 20	73 . 49 . 37,47

τ Tauri.	
Dec. 20	67 . 21 . 51,35

Capella.	
May 12	44 . 10 . 36,98
13	37,44
14	39,41
16	40,19
18	39,47
20	39,08
30	39,22
July 17	38,85
22	39,32
26	39,12
27	39,58
Aug. 1	40,03
2	39,78
3	39,43
5	40,83
Nov. 23	38,67
Dec. 7	39,24
20	39,48
22	37,50

Capella R.	
May 12	44 . 10 . 41,05
13	37,93
14	39,69
16	38,30
18	39,86
20	40,20
30	40,30
July 17	37,98
22	40,27
26	41,24
27	40,34
Aug. 1	39,15
2	40,00
3	39,91
5	39,26
Nov. 23	38,58

Capella R. *continued.*	
	° ′ ″
Dec. 7	44 . 10 . 40,14
20	39,91
22	40,90

n Tauri.	
Nov. 23	68 . 4 . 47,56
24	49,62

β Tauri.	
March 29	61 . 32 . 16,95
July 22	17,90
Aug. 5	19,50
7	19,40
Nov. 23	17,65
24	18,32

β Tauri R.	
March 29	61 . 32 . 19,94
July 22	19,68
Aug. 5	18,84
7	18,86
Nov. 23	19,15
24	18,60

31 Camelopardali SP.	
Aug. 2	30 . 9 . 35,49

31 Camelopardali SP. R.	
Aug. 2	30 . 9 . 34,92

α Orionis.	
May 13	82 . 37 . 47,00
July 3	48,63
17	48,43
22	47,86
Aug. 7	48,01
8	48,42

α Orionis R.	
	° ′ ″
May 13	82 . 37 . 48,27
July 3	49,45
17	48,72
22	50,35
Aug. 7	48,26
8	48,38

α Lyncis SP.	
Aug. 21	28 . 26 . 34,90

α Lyncis SP. R.	
Aug. 21	28 . 26 . 38,89

μ Geminorum.	
March 24	67 . 24 . 32,35

ε Geminorum.	
Dec. 23	64 . 42 . 49,51

ε Geminorum R.	
Dec. 23	64 . 42 . 49,73

A.S.C. 874. SP.	
Aug. 2	7 . 17 . 51,64
Sept. 1	54,00

A.S.C. 874. SP. R.	
Aug. 2	7 . 17 . 50,70
Sept. 1	51,93

Castor.	
March 30	57 . 45 . 32,31
April 4	33,91
Dec. 24	33,49

Castor R.	
	° ′ ″
March 30	57 . 45 . 34,58
April 4	33,67
Dec. 24	32,60

Procyon.	
April 4	84 . 21 . 36,85
May 20	37,64
28	37,57
Dec. 24	38,57

Procyon R.	
April 4	84 . 21 . 36,93
May 20	38,12
28	35,51
Dec. 24	37,01

Pollux.	
March 29	61 . 35 . 2,10
30	3,69
April 29	3,28
May 17	3,03
18	2,53
19	3,58
20	3,04
31	2,77
Aug. 16	2,41
28	3,89
Sept. 12	2,44
27	2,50

Pollux R.	
March 29	61 . 35 . 3,56
30	3,15
April 29	2,38
May 17	2,43
18	4,31
19	3,02
20	3,68
31	4,10
Aug. 16	1,91
28	3,76
Sept. 12	3,43
27	4,53

π² Ursæ Majoris SP.	
	° ′ ″
Nov. 5	25 . 6 . 27,97

π² Ursæ Majoris SP. R.	
Nov. 5	25 . 6 . 28,68

α Hydræ.	
March 24	97 . 57 . 3,52

α Hydræ R.	
March 24	97 . 57 . 5,41

ο Leonis.	
April 27	79 . 21 . 53,84
29	55,66

ψ Leonis.	
April 27	75 . 13 . 53,20
29	54,19

ε Leonis.	
April 27	65 . 28 . 25,85
29	27,79

υ Ursæ Majoris SP.	
Aug. 3	30 . 11 . 40,65
31	39,34
Sept. 2	38,63
5	38,39
6	38,92
9	39,18
23	40,74
24	41,59
30	38,15
Oct. 1	39,72
3	39,52
5	36,97
13	38,51
28	36,98
Nov. 17	41,35

υ Ursæ Majoris SP. R.		°	′	″
Aug.	3	30	11	39,99
	31			40,74
Sept.	2			39,71
	5			40,50
	6			41,28
	9			41,53
	23			41,15
	24			38,65
	30			39,73
Oct.	1			38,10
	3			40,16
	5			41,09
	13			39,17
	28			39,86
Nov.	17			41,14

μ Leonis.				
April	27	63	13	26,75
	29			27,64

10 Sextantis.				
April	27	80	17	34,49
	29			34,37

Regulus.				
March	24	77	14	3,26
	25			3,00
	31			3,37
April	22			2,96
	27			2,18
	29			2,32
May	10			3,55
	13			2,49
	18			3,38
	19			3,81
	26			3,05
	27			3,52
	28			3,41
	30			2,95
	31			2,64

Regulus R.		°	′	″
March	24	77	14	2,85
	25			0,94
	31			2,60
April	22			1,54
	27			2,30
	29			2,05
May	10	77	14	3,10
	13			3,58
	18			2,60
	19			2,07
	26			2,73
	27			3,40
	28			4,00
	30			2,96
	31			3,08

A.S.C. 1215.				
April	27	96	30	39,92
	29			40,04

γ Leonis.				
March	30	69	19	53,72
April	25			53,94
	27			54,05

ρ Leonis.				
April	25	79	51	8,01
	27			5,33

ρ Leonis R.				
April	25	79	51	5,80
	27			5,68

k Leonis.				
March	29	74	56	28,45
	31			28,05

l Leonis.				
April	27	78	35	19,02
	29			19,96

* Æ. 10h. 44m. 25s.				
April	15	26	10	44,48
	25			44,44

* Æ. 10h. 52m. 10s.				
April	15	25	59	56,43
	25			58,55

α Ursæ Majoris.		°	′	″
March	25	27	21	56,58
	30			54,41
	31			55,99
April	22			54,92
	27			55,22
	29			56,71
May	9			55,59
	10			55,09
	13			54,52
	26			55,42
	27			54,50
	31			54,62
June	30			55,38
Nov.	30			55,15

α Ursæ Majoris R.				
March	25	27	21	52,88
	30			53,52
	31			54,84
April	22			54,10
	27			54,86
	29			54,17
May	9			53,98
	10			54,27
	13			54,44
	26			54,17
	27			54,54
	31			54,24
June	30			55,37
Nov.	30			55,12

α Ursæ Majoris SP.				
Aug.	31	27	21	52,89
Sept.	23			56,49
	28			53,82
Oct.	4			55,70
Nov.	3			56,55
	7			53,83
	12			54,83
	24			55,93
Dec.	1			55,31
	6			56,31

α Ursæ Majoris SP. R.		°	′	″
Aug.	31	27	21	55,04
Sept.	23	27	21	55,54
	28			54,43
Oct.	4			55,01
Nov.	3			55,06
	7			54,33
	12			54,96
	24			54,11
Dec.	1			55,75
	6			53,09

n Leonis.				
Nov.	30	75	47	52,41
Dec.	5			57,47

σ Leonis.				
April	27	83	4	21,68

ι Leonis.				
Nov.	30	78	34	2,64
Dec.	5			5,10

* Æ. 11h. 17m. 14s.				
April	22	26	37	8,34

τ Leonis.				
April	27	86	14	28,31
Nov.	30			26,92

λ Draconis SP.				
Oct.	11	19	45	49,81
	21			50,40
Nov.	3			52,65
Dec.	16			52,13

λ Draconis SP. R.				
Oct.	11	19	45	52,79
	21			52,59

λ Draconis SP. R. *continued.*

	° ′ ″
Nov. 3	19 . 45 . 51,83
Dec. 16	52,72

β Leonis.

April 7	74 . 30 . 39,76
Nov. 17	41,69
30	35,78

β Leonis R.

April 7	74 . 30 . 41,12
Nov. 17	39,66
30	39,96

γ Ursæ Majoris.

March 24	35 . 23 . 36,00
May 9	36,47
10	36,59
16	35,79
19	36,32
21	36,30
Nov. 17	36,86

γ Ursæ Majoris R.

March 24	35 . 23 . 36,90
May 9	36,94
10	35,62
16	35,06
19	34,70
21	35,18
Nov. 17	36,03

γ Ursæ Majoris SP.

Oct. 11	35 . 23 . 35,25
Nov. 8	34,61
Dec. 5	37,93

γ Ursæ Majoris SP. R.

Oct. 11	35 . 23 . 35,36
Nov. 8	35,97
Dec, 5	35,10

o Virginis.

	° ′ ″
April 27	80 . 21 . 19,50
29	20,86

r Virginis.

April 29	87 . 10 . 50,35
May 6	51,27

δ Ursæ Majoris.

April 7	32 . 3 . 21,12
22	20,37
May 30	20,40
Nov. 17	21,75

δ Ursæ Majoris R.

April 7	32 . 3 . 18,63
22	20,34
May 30	21,65
Nov. 17	19,62

c Virginis.

March 31	85 . 46 . 24,06
Nov. 30	23,58

δ Corvi.

April 9	105 . 36 . 5,06
29	3,59
May 4	5,37
6	4,16
9	5,37
30	2,65

δ Corvi R.

April 9	105 . 36 . 4,99
29	3,67
May 4	5,63
6	(10,82)
9	4,97
30	3,92

A. S. C. 1458.

	° ′ ″
April 29	87 . 14 . 27,59
30	29,04

A. S. C. 1459.

April 29	93 . 28 . 12,10
30	13,13

γ^1 Virginis.

March 31	90 . 32 . 54,03
Nov. 30	53,27

δ Virginis.

April 29	85 . 42 . 34,46
Nov. 30	34,24

k^1 Virginis.

May 6	92 . 55 . 32,13
10	32,95

ε Virginis.

April 30	78 . 9 . 26,83
May 6	27,32

ε Virginis R.

April 30	78 . 9 . 26,74

Spica.

March 26	100 . 18 . 8,48
31	9,37
April 2	8,45
11	10,03
13	8,88
15	8,28
27	9,38
30	8,55
May 2	10,03
6	10,50
12	9,96
17	8,42
21	8,38
26	9,23
27	7,97

Spica *continued.*

	° ′ ″
June 14	100 . 18 . 9,24
18	10,10
20	9,61
Dec. 9	10,10

Spica R.

March 26	100 . 18 . 8,38
31	8,89
April 2	8,95
11	11,49
13	10,62
15	10,00
27	9,99
30	10,43
May 2	9,21
6	9,74
12	10,87
17	10,15
21	8,89
26	8,94
27	9,66
June 14	10,86
18	9,40
20	9,12
Dec. 9	10,42

m Virginis.

April 2	97 . 52 . 20,82

η Ursæ Majoris.

March 30	39 . 51 . 56,07
April 4	56,95
11	56,85
13	56,02
15	57,43
26	56,35
30	55,65
May 2	56,16
6	56,46
11	56,50
June 4	58,40
11	56,65
14	55,95
15	56,85
18	56,96
20	57,87
24	57,15
25	56,06

η Ursæ Majoris R.	° ′ ″
March 30......	39 . 51 . 56,33
April 4	55,66
11	57,16
13	57,20
15	57,77
26	56,56
30	55,58
May 2	56,70
6	55,76
11	57,39
June 4	57,77
11	57,39
14	57,11
15	57,51
18	57,09
20	57,67
24	56,97
25	56,49

A. S. C. 1600.	
April 7.....	104 . 10 . 47,69
11	48,30
13	46,91

94 Virginis.	
April 7......	98 . 6 . 19,52
11	20,97
13	18,58

α Draconis SP.	
Nov. 10......	24 . 50 . 17,25
23	18,53
29	18,42

α Draconis SP. R.	
Nov. 10......	24 . 50 . 17,30
23	16,90
29	18,13

κ Virginis.	
May 27......	99 . 30 . 20,77

κ Virginis R.	
May 27......	99 . 30 . 23,06

υ Bootis.	° ′ ″
April 22......	79 . 7 . 25,11
26	24,22
27	24,63

ι Virginis.	
April 29......	95 . 12 . 51,43
30	51,78

Arcturus.	
April 3......	69 . 57 . 38,23
May 1	36,76
2	37,03
6	36,51
9	37,97
10	36,83
11	38,64
12	36,52
14	36,78
16	35,98
17	35,86
20	37,23
21	35,24
June 8	35,90
14	35,99
15	36,71
16	36,65
20	37,22
24	37,51
28	36,41
July 1	35,96
2	37,39
6	36,21
11	35,25
18	36,30
Aug. 9	37,36
11	37,53
12	36,78
Oct. 17	36,93
19	35,34
Nov. 6	36,10
7	35,98
15	36,57
20	36,28
23	36,68
Dec. 14	35,83
15	36,62

Arcturus R.	
April 3......	69 . 57 . 36,58

Arcturus R. *continued.*	° ′ ″
May 1......	69 . 57 . 37,56
2	37,76
6	35,75
9	36,71
10	37,47
11	38,10
12	38,68
14	36,86
16	37,79
17	37,89
20	37,01
21	36,69
June 8	38,49
14	37,71
15	37,44
16	37,06
20	35,93
24	35,31
28	37,00
July 1	38,83
2	38,00
6	37,46
11	37,90
18	37,22
Aug. 9	38,60
11	38,05
12	37 02
Oct. 17	37,38
19	36,98
Nov. 6	36,90
7	36,57
15	37,08
20	35,72
23	36,78
Dec. 14	37,62
15	38,70

λ Virginis.	
May 27.....	102 . 36 . 41,42

θ Bootis.	
May 2......	37 . 23 . 19,22
11	17,38

N^2 Virginis.	
May 16......	96 . 9 . 34,17
17	35,35

μ Virginis.	
May 11......	94 . 56 . 27,65
16	25,53

μ Virginis R.	° ′ ″
May 11......	94 . 56 . 26,18
16	25,91

ε Bootis.	
April 3......	62 . 13 . 49,62
May 4	50,29
June 8	49,80
16	49,02
July 2	50,20
Aug. 9	49,59
11	49,19
12	50,06
17	49,72

ε Bootis R.	
April 3......	62 . 13 . 49,65
May 4	49,71
June 8	50,08
16	48,68
July 2	50,33
Aug. 9	49,55
11	50,35
12	50,51
17	49,32

α^2 Libræ.	
May 4.....	105 . 21 . 18,89
11	19,89
22	18,32

α^2 Libræ R.	
May 4.....	105 . 21 . 19,66
11	19,17
22	19,60

β Ursæ Minoris.	
May 22......	15 . 10 . 28,59
June 8	29,27
11	26,78
20	28,39
July 6	28,22
16	27,84

Mean North Polar Distances of Stars observed in the Year 1836.

β Ursæ Minoris R.

		°	′	″
May	22	15	10	26,89
June	8			26,50
	11			26,96
	20			25,11
July	6			27,92
	16			27,16

β Ursæ Minoris SP.

Nov.	23	15	10	27,80
Dec.	8			27,59
	13			28,39
	16			28,26

β Ursæ Minoris SP. R.

Nov.	23	15	10	27,91
Dec.	8			27,28
	13			29,33
	16			28,55

δ Libræ.

May	2	97	51	48,78
	11			47,57

ι¹ Libræ.

June	11	109	9	55,85
	24			57,23
	25			56,30

∗ Æ $15^h. 8^m. 10^s.$

June	11	97	14	53,83

ο² Libræ.

June	11	104	32	34,98

μ Bootis.

June	11	52	2	37,36

α Coronæ Borealis.

May	2	62	43	42,60

α Coronæ Borealis *continued.*

		°	′	″
June	13	62	43	42,90
	24			43,69
Dec.	15			43,46

α Coronæ Borealis R.

May	2	62	45	43,88
June	13			44,31
	24			43,94
Dec.	15			44,93

α Serpentis.

June	13	83	3	9,67
	16			10,71

α Serpentis R.

June	13	83	3	13,24
	16			10,53

β Serpentis.

June	14	74	3	35,88

ε Serpentis.

June	14	85	1	23,75
	16			23,41

γ Serpentis.

June	14	73	47	52,54

ψ Libræ.

June	14	103	47	58,64
	16			58,58

ζ Ursæ Minoris.

June	11	11	42	17,02
	13			17,57
	15			16,90
	29			16,65
July	7			17,27

ζ Ursæ Minoris R.

		°	′	″
June	11	11	42	16,18
	13			16,56
	15			15,53
	29			16,24
July	7			16,35

δ Scorpii.

May	2	112	8	54,33

β¹ Scorpii.

July	6	109	20	57,79

β¹ Scorpii R.

July	6	109	20	56,47

δ Ophiuchi.

June	28	93	15	56,17

δ Ophiuchi R.

June	28	93	15	57,22

η Draconis.

June	29	28	6	47,29
July	1			46,68

η Draconis R.

June	29	28	6	46,70
July	1			46,34

ε Ursæ Minoris.

July	12	7	42	18,80
	30			19,15

ε Ursæ Minoris R.

July	12	7	42	20,80
	30			16,61

α Herculis.

		°	′	″
June	14	75	24	59,29
	25			61,93
July	7			59,63
	11			58,70
Aug.	10			59,97
	24			60,38

α Herculis R.

June	14	75	24	60,57
	25			62,03
July	7			63,06
	11			60,78
Aug.	10			61,51
	24			60,69

α Ophiuchi.

June	25	77	18	51,87
	28			49,90
	29			51,29
July	23			51,46
	30			52,79
Aug.	10			51,79
	26			52,86
	31			52,58

α Ophiuchi R.

June	25	77	18	52,41
	28			50,94
	29			50,95
July	23			53,75
	30			52,87
Aug.	10			52,42
	26			51,71
	31			53,66

μ¹ Sagittarii.

June	28	111	5	39,24

δ Sagittarii.

June	28	119	53	15,74

δ Ursæ Minoris.

July	18	3	24	40,00
	23			38,15
	30			39,45

δ Ursæ Minoris *continued.*

		°	′	″
Aug.	1	3	24	38,89
	2			39,20
	10			38,86
	11			37,93
	13			39,52
	15			37,37
	19			38,45
	21			40,78
	26			39,42
	31			39,06
Sept.	26			38,07
Oct.	16			39,30

δ Ursæ Minoris R.

July	18	3	24	39,02
	23			39,03
	30			38,00
Aug.	1			37,95
	2			39,76
	10			38,05
	11			38,36
	13			37,31
	15			37,87
	19			37,93
	21			37,83
	26			37,99
	31			37,96
Sept.	26			38,33
Oct.	16			36,84

α Lyræ.

June	14	51	21	51,75
July	2			52,04
	5			53,26
	11			51,36
	21			52,07
	23			50,70
	30			51,13
Aug.	1			51,91
	2			52,53
	10			52,35
	11			51,91
	13			53,33
	15			52,23
	19			54,37
	21			52,47
	24			52,72
	26			52,12
	31			51,66
Sept.	2			52,32
	24			49,10
	28			51,69

α Lyræ *continued.*

		°	′	″
Oct.	3	51	21	49,53
	16			53,13
	19			51,29
Dec.	10			49,38
	15			51,48
	16			50,88
	17			51,72
	20			50,77
	23			51,70
	24			51,57

α Lyræ R.

June	14	51	21	51,85
July	2			52,40
	5			52,54
	11			53,14
	21			52,54
	23			53,80
	30			52,23
Aug.	1			53,53
	2			52,78
	10			53,39
	11			52,42
	13			52,16
	15			53,98
	19			51,03
	21			52,47
	24			51,92
	26			53,16
	31			53,64
Sept.	2			53,27
	24			52,41
	28			52,65
Oct.	3			51,97
	16			50,64
	19			51,48
Dec.	10			50,43
	15			52,57
	16			52,01
	17			52,54
	20			53,03
	23			51,94
	24			52,69

β Lyræ.

July	2	56	49	24,36
	4			22,97
	21			22,12
Aug.	1			21,80
	27			22,21
Sept.	1			22,89
	3			21,81
	6			21,73

β Lyræ R.

		°	′	″
July	2	56	49	24,58
	4			23,14
	21			24,43
Aug.	1			23,49
	27			23,59
Sept.	1			23,24
	3			23,28
	6			23,90

τ Sagittarii.

June	29	117	54	21,36

δ Draconis.

Aug.	3	22	37	35,93

δ Draconis R.

Aug.	3	22	37	36,12

δ Aquilæ.

July	4	87	12	22,23

δ Aquilæ R.

July	4	87	12	20,82

h^2 Sagittarii.

June	28	115	14	15,88
	29			16,02
Sept.	3			17,71

γ Aquilæ.

July	27	79	46	50,43
Aug.	3			52,19
	6			50,87
Sept.	13			51,37
	23			48,59
Oct.	3			50,37
	15			50,60

γ Aquilæ R.

		°	′	″
July	27	79	46	52,48
Aug.	3			52,53
	6			50,26
Sept.	13			51,41
	23			50,81
Oct.	3			50,04
	15			50,49

α Aquilæ.

July	18	81	33	32,44
Aug.	27			32,01
Sept.	3			30,50
	9			32,10
	13			34,68
	14			31,16
Oct.	15			32,46
Nov.	14			32,28
Dec.	15			33,58
	20			33,26
	24			33,24

α Aquilæ R.

July	18	81	33	33,87
Aug.	27			32,61
Sept.	3			33,24
	9			33,08
	13			33,93
	14			33,59
Oct.	15			32,34
Nov.	14			30,62
Dec.	15			32,30
	20			32,08
	24			31,61

59 Sagittarii.

July	27	117	35	48,49
Aug.	10			49,74

β Aquilæ.

July	21	83	59	49,69

β Aquilæ *continued.*

	°	′	″
Aug. 6	83	59	49,34
Sept. 13			49,89
Oct. 3			48,85
Nov. 14			49,50

β Aquilæ R.

July 21	83	59	51,15
Aug. 6			50,74
Sept. 13			50,79
Oct. 3			48,83
Nov. 14			50,87

c Sagittarii.

July 27	118	9	29,84
30			32,53

α^1 Capricorni.

Aug. 10	103	0	31,59
12			32,44
15			31,93
25			33,39
Sept. 10			32,62
Oct. 15			31,73

α^1 Capricorni R.

Aug. 10	103	0	33,06
12			31,42
15			31,47
25			32,76
Sept. 10			32,12
Oct. 15			32,77

α^2 Capricorni.

Aug. 10	103	2	47,96
12			48,53
15			48,57
25			49,13
Sept. 10			49,20
Oct. 15			47,61
20			49,20

α^2 Capricorni R.

	°	′	″
Aug. 10	103	2	49,77
12			48,52
15			48,43
25			49,53
Sept. 10			49,87
Oct. 15			49,46
20			48,26

σ Capricorni.

June 29	109	37	25,91
Nov. 14			25,41

λ Ursæ Minoris.

July 20	1	11	4,09

λ Ursæ Minoris R.

July 20	1	11	2,85

α Cygni.

July 20	45	18	9,67
27			7,53
Aug. 3			7,02
8			7,98
Oct. 20			8,15
29			7,49
Nov. 5			7,99
16			8,92

α Cygni R.

July 20	45	18	9,87
27			9,58
Aug. 3			9,27
8			9,66
Oct. 20			8,34
29			8,19
Nov. 5			7,39
16			9,65

ψ Capricorni.

Aug. 24	115	51	14,84
25			15,30

ψ Capricorni *continued.*

	°	′	″
Nov. 14	115	51	16,38
17			15,28

ν Cygni.

July 27	49	27	38,26
Nov. 16			38,01

ν Cygni R.

July 27	49	27	39,17

η Capricorni.

July 27	110	29	51,26
30			52,35

α Cephei.

July 20	28	6	27,02
Aug. 6			27,63
8			26,61
9			28,08
12			26,39
19			27,21
25			27,38
Sept. 2			24,99
5			26,76
6			27,13
9			26,33
10			27,02
13			27,47
23			26,00
24			25,52
30			26,59
Oct. 1			27,31
4			26,46
5			24,60
11			26,01
13			26,40
15			26,41
19			25,79
28			27,82
31			24,14
Nov. 7			25,45
14			26,92
24			26,91

α Cephei R.

July 20	28	6	26,00

α Cephei R. *continued.*

	°	′	″
Aug. 6	28	6	26,80
8			26,20
9			25,59
12			26,39
19			25,69
25			26,87
Sept. 2			25,63
5			26,78
6			26,79
9			26,64
10			23,83
13			26,10
23			25,39
24			26,45
30			23,55
Oct. 1			25,24
4			25,67
5			25,01
11			24,20
13			24,70
15			24,83
19			25,94
28			25,44
31			25,62
Nov. 7			26,12
14			25,50
24			25,26

α Cephei SP.

March 25	28	6	26,36

α Cephei SP. R.

March 25	28	6	26,39

ζ Capricorni.

Aug. 24	113	6	58,25
25			59,60
Nov. 14			59,03
17			60,62

∗ Æ $21^{h}. 19^{m}. 45^{s}$.

July 20	75	24	12,46
27			12,44

β Aquarii.

Aug. 9	96	17	16,80
13			18,16
24			16,96

β Aquarii *continued.*

		°	′	″
Sept.	3	96	17	17,93
	5			17,48
	6			16,90
	9			16,72
	23			17,64
Oct.	4			16,33
	5			17,26
	19			17,16
	28			17,36
	31			17,86
Nov.	7			17,92
	8			16,49
	14			17,29

β Aquarii R.

		°	′	″
Aug.	9	96	17	18,05
	13			17,42
	24			18,15
Sept.	3			17,38
	5			18,57
	6			18,16
	9			19,53
	23			17,92
Oct.	4			18,46
	5			16,99
	19			17,81
	28			18,29
	31			19,38
Nov.	7			17,80
	8			18,78
	14			18,24

β Cephei.

		°	′	″
Aug.	6	20	9	30,89
Sept.	14			29,42
Oct.	3			29,23
	13			28,88
	18			28,83
	28			31,52
Nov.	7			28,90
	8			30,07
Dec.	1			29,62

β Cephei R.

		°	′	″
Aug.	6	20	9	29,75
Sept.	14			30,55
Oct.	3			29,76
	13			26,53
	18			27,14
	28			28,75
Nov.	7			27,92
	8			27,91
Dec.	1			28,81

β Cephei SP.

		°	′	″
March	25	20	9	29,03

β Cephei SP. R.

		°	′	″
March	25	20	9	29,25

ε Capricorni.

		°	′	″
Nov.	14	110	11	46,56
	17			45,58

γ Capricorni.

		°	′	″
Aug.	24	107	23	54,63
	25			55,40
Oct.	18			55,76
	19			52,82

δ Capricorni.

		°	′	″
Oct.	18	106	52	3,69
	19			1,71

α Aquarii.

		°	′	″
Aug.	8	91	6	47,06
	17			47,61
	19			47,32
Sept.	30			46,19
Oct.	29			46,06

α Aquarii R.

		°	′	″
Aug.	8	91	6	46,70
	17			47,00
	19			45,92
Sept.	30			46,65
Oct.	29			46,83

δ Aquarii.

		°	′	″
Dec.	13	106	41	26,09
	16			26,49

α Pegasi.

		°	′	″
Sept.	14	75	40	31,16
	26			31,71
Oct.	21			30,25
Dec.	16			33,27

α Pegasi R.

		°	′	″
Sept.	14	75	40	32,63
	26			30,94
Oct.	21			30,75
Dec.	16			31,19

φ Aquarii.

		°	′	″
Aug.	27	96	55	53,68
	31			53,87
Sept.	23			52,57
	24			54,24

φ Aquarii R.

		°	′	″
Sept.	23	96	55	54,63

ψ³ Aquarii.

		°	′	″
Aug.	27	100	30	21,40
	31			21,18
Oct.	21			22,46
Dec.	13			20,46
	15			21,85

***n* Piscium.**

		°	′	″
Oct.	21	93	40	21,46
	22			21,49

***p* Piscium.**

		°	′	″
Sept.	23	94	27	56,93
Nov.	14			55,35
Dec.	15			56,19

***s* Piscium.**

		°	′	″
Sept.	23	96	37	28,70
Nov.	14			28,97

α Andromedæ.

		°	′	″
Sept.	20	61	48	51,46
	28			52,48
Oct.	4			52,36
	10			53,76
	21			52,97
	22			53,00
	31			51,81
Nov.	5			53,10
	7			52,80
	8			52,15
Dec.	1			51,50

α Andromedæ R.

		°	′	″
Sept.	20	61	48	53,98
	28			52,87
Oct.	4			53,88
	10			55,57
	21			53,79
	22			53,89
	31			54,06
Nov.	5			52,48
	7			55,19
	8			53,74
Dec.	1			54,55

CATALOGUE *of the* CONCLUDED MEAN NORTH POLAR DISTANCES, *Jan.* 1, 1836, *with the* ANNUAL VARIATIONS.

(The N.P.D. have been corrected for the Discordance of Zenith Points, as is explained in the Introduction, and for the Correction of Latitude mentioned in the Addendum to the Volume for 1834. The Annual Variations are taken from the Royal Astronomical Society's Catalogue, or are computed by the same formulæ.)

Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1836.	Annual Variation.	Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1836.	Annual Variation.
		° ′ ″	″			° ′ ″	″
t Piscium	2	88 . 58 . 8,88	– 19,990	A. S. C. 874. SP....	2	7 . 17 . 52,91	+ 4,747
α Cassiopeiæ........	5	34 . 21 . 47,14	– 19,861	A. S. C. 874. SP. R.	2	7 . 17 . 50,93	
α Cassiopeiæ R......	5	47,27		Castor..............	3	57 . 45 . 33,81	+ 7,161
α Cassiopeiæ SP. ...	8	46,26		Castor R............	3	33,35	
α Cassiopeiæ SP. R..	8	46,05		Procyon	4	84 . 21 . 38,04	+ 8,682
δ Piscium	2	83 . 18 . 32,22	– 19,740	Procyon R.........	4	36,81	
m Ceti	2	92 . 2 . 9,61	– 19,669	Pollux.............	12	61 . 35 . 3,51	+ 8,064
γ Cassiopeiæ........	6	30 . 10 . 22,51	– 19,632	Pollux R...........	12	3,09	
γ Cassiopeiæ R......	6	22,47		π^2 Ursæ Majoris SP.	1	25 . 6 . 27,97	+ 11,869
γ Cassiopeiæ SP. ...	2	21,01		π^2 Urs. Maj. SP. R..	1	28,38	
γ Cassiopeiæ SP. R..	2	21,72		α Hydræ	1	97 . 57 . 3,86	+ 15,310
Polaris	22	1 . 33 . 55,35	– 19,334	α Hydræ R.........	1	5,37	
Polaris R..........	14	55,44		ο Leonis...........	2	79 . 21 . 55,16	+ 16,010
Polaris SP.........	54	55,67		ψ Leonis...........	2	75 . 13 . 54,16	+ 16,135
Polaris SP. R......	54	55,33		ε Leonis	2	65 . 28 . 27,37	+ 16,224
δ Cassiopeiæ........	2	30 . 37 . 11,52	– 18,986	υ Ursæ Majoris SP..	15	50 . 11 . 39,21	+ 16,359
δ Cassiopeiæ R.	2	11,93		υ Urs. Maj. SP. R..	15	39,90	
μ Piscium..........	2	84 . 42 . 14,97	– 18,795	μ Leonis...........	2	63 . 13 . 27,76	+ 16,570
ν Piscium	2	85 . 20 . 42,08	– 18,429	10 Sextantis	2	80 . 17 . 34,83	+ 16,781
ο Piscium..........	2	81 . 40 . 14,30	– 18,295	Regulus	15	77 . 14 . 3,49	+ 17,327
ε Cassiopeiæ SP.....	5	27 . 8 . 29,41	– 18,081	Regulus R..........	15	2,52	
ε Cassiopeiæ SP. R..	5	30,00		A. S. C. 1215......	2	96 . 30 . 40,33	+ 17,478
β Arietis	2	69 . 59 . 47,71	– 17,966	γ Leonis...........	3	69 . 19 . 54,41	+ 17,802
β Arietis R.	2	47,45		ρ Leonis...........	2	79 . 51 . 7,08	+ 18,305
α Arietis............	3	67 . 18 . 57,91	– 17,461	ρ Leonis R.........	2	5,63	
α Arietis R.........	3	58,79		*k* Leonis...........	2	74 . 56 . 28,71	+ 18,755
γ Ceti..............	2	87 . 27 . 34,00	– 15,658	*l* Leonis	2	78 . 35 . 19,91	+ 18,843
γ Ceti R.	2	32,70		∗ Æ. 10^h. 44^m. 25^s.	2	26 . 10 . 44,13	+ 18,963
38 Arietis..........	2	78 . 14 . 54,38	– 15,593	∗ Æ. 10^h. 52^m. 10^s.	2	25 . 59 . 57,16	+ 19,171
π Arietis	2	73 . 13 . 20,36	– 15,364	α Ursæ Majoris.....	14	27 . 21 . 54,97	+ 19,196
α Ceti.............	2	86 . 33 . 29,92	– 14,575	α Ursæ Majoris R...	14	54,94	
α Ceti R.	2	27,95		α Ursæ Majoris SP..	10	55,16	
α Persei............	3	40 . 43 . 44,83	– 13,397	α Urs. Maj. SP. R..	10	54,44	
α Persei R.........	3	43,55		*n* Leonis...........	2	75 . 47 . 55,39	+ 19,508
σ Persei	2	42 . 34 . 39,57	– 12,974	σ Leonis...........	1	83 . 4 . 22,06	+ 19,611
σ Persei R.........	2	39,71		ι Leonis	2	78 . 34 . 4,29	+ 19,658
δ Persei............	1	42 . 44 . 37,29	– 12,142	∗ Æ. 11^h. 17^m. 14^s.	1	26 . 37 . 8,02	+ 19,695
δ Persei R..........	1	37,65		τ Leonis...........	2	86 . 14 . 27,99	+ 19,726
Aldebaran	1	73 . 49 . 36,48	– 7,979	λ Draconis SP......	4	19 . 45 . 51,27	+ 19,756
Aldebaran R.	1	37,30		λ Draconis SP. R....	4	52,16	
τ Tauri	1	67 . 21 . 51,88	– 7,504	β Leonis	3	74 . 30 . 39,54	+ 19,969
Capella............	19	44 . 10 . 39,59	– 4,837	β Leonis R..........	3	40,09	
Capella R..........	19	39,59		γ Ursæ Majoris.....	7	35 . 23 . 36,26	+ 19,999
n Tauri............	2	68 . 4 . 49,11	– 4,419	γ Ursæ Majoris R...	7	36,15	
β Tauri	6	61 . 32 . 18,86	– 3,863	γ Ursæ Majoris SP..	3	35,89	
β Tauri R..........	6	18,91		γ Urs. Maj. SP. R...	3	35,22	
31 Camelopardali SP.	1	30 . 9 . 35,47	– 1,770	ο Virginis..........	2	80 . 21 . 20,58	+ 20,040
31 Camel. SP. R....	1	34,64		*r* Virginis	2	87 . 10 . 51,18	+ 20,042
α Orionis	6	82 . 37 . 48,45	– 1,226	δ Ursæ Majoris.....	4	32 . 3 . 20,69	+ 20,033
α Orionis R.........	6	48,82		δ Ursæ Majoris R...	4	20,58	
a Lyncis SP........	1	28 . 26 . 34,89	+ 0,195	*c* Virginis..........	2	85 . 46 . 24,19	+ 20,016
a Lyncis SP. R.	1	38,60		δ Corvi............	6	105 . 36 . 4,71	+ 19,958
μ Geminorum	1	67 . 24 . 32,88	+ 1,107	δ Corvi R.	5	4,60	
ε Geminorum.......	1	64 . 42 . 50,06	+ 2,916	A. S. C. 1458......	2	87 . 14 . 28,69	+ 19,874
ε Geminorum R. ...	1	49,48		A. S. C. 1459......	2	93 . 28 . 12,97	+ 19,871

CATALOGUE of the Concluded Mean North Polar Distances, &c. *continued.*

Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1836.	Annual Variation.	Name of Star.	Number of Observations.	Mean N.P.D. Jan. 1, 1836.	Annual Variation.
		° ′ ″	″			° ′ ″	
γ^1 Virginis	2	90.32.54,01	+19,835	δ Sagittarii	1	119.53.16,07	− 0,884
δ Virginis	2	85.42.34,72	+19,622	δ Ursæ Minoris	15	3.24.38,78	− 2,196
k^1 Virginis	2	92.55.32,89	+19,550	δ Ursæ Minoris R.	15	38,63	
ε Virginis	2	78. 9.27,50	+19,495	α Lyræ	31	51.21.52,31	− 2,718
ε Virginis R.	1	26,62		α Lyræ R.	31	52,22	
Spica	19	100.18. 9,55	+18,944	β Lyræ	8	56.49.23,06	− 3,807
Spica R.	19	9,75		β Lyræ R.	8	23,44	
m Virginis	1	97.52.21,16	+18,425	τ Sagittarii	1	117.54.21,69	− 4,876
η Ursæ Majoris	18	39.51.56,93	+18,134	δ Draconis	1	22.37.35,58	− 6,234
η Ursæ Majoris R.	18	56,94		δ Draconis R.	1	36,77	
A. S. C. 1600	3	104.10.47,97	+17,561	δ Aquilæ	1	87.12.22,59	− 6,601
94 Virginis	3	98. 6.20,03	+17,474	δ Aquilæ R.	1	20,76	
α Draconis SP	3	24.50.18,07	+17,367	h^2 Sagittarii	3	115.14.16,87	− 7,574
α Draconis SP. R.	3	17,14		γ Aquilæ	7	79.46.51,04	− 8,326
κ Virginis	1	99.30.21,11	+17,187	γ Aquilæ R.	7	51,04	
κ Virginis R.	1	23,02		α Aquilæ	11	81.33.32,92	− 8,667
υ Bootis	3	79. 7.25,06	+17,065	α Aquilæ R.	11	32,56	
ι Virginis	2	95.12.51,96	+17,038	59 Sagittarii	2	117.35.49,45	− 8,982
Arcturus	37	69.57.37,12	+18,962	β Aquilæ	5	83.59.49,83	− 8,478
Arcturus R.	37	37,11		β Aquilæ R.	5	50,39	
λ Virginis	1	102.36.41,76	+16,907	*c* Sagittarii	2	118. 9.31,52	− 9,424
θ Bootis	2	37.23.18,40	+16,988	α^1 Capricorni	6	103. 0.32,62	−10,637
N^2 Virginis	2	96. 9.35,11	+16,431	α^1 Capricorni R.	6	32,22	
μ Virginis	2	94.56.26,94	+15,680	α^2 Capricorni	7	103. 2.48,83	−10,667
μ Virginis R.	2	26,00		α^2 Capricorni R.	7	49,08	
ε Bootis	9	62.13.50,28	+15,490	σ Capricorni	2	109.37.25,99	−10,738
ε Bootis R.	9	49,54		λ Ursæ Minoris	1	1.11. 3,92	−11,827
α^2 Libræ	3	105.21.19,37	+15,270	λ Ursæ Minoris R.	1	3,32	
α^2 Libræ R.	3	19,44		α Cygni	8	45.18. 8,58	−12,588
β Ursæ Minoris	6	15.10.27,88	+14,701	α Cygni R.	8	8,80	
β Ursæ Minoris R.	6	27,36		ψ Capricorni	4	115.51.15,78	−12,615
β Ursæ Minoris SP.	4	28,05		ν Cygni	2	49.27.38,68	−13,594
β Urs. Min. SP. R.	4	27,93		ν Cygni R.	1	38,93	
δ Libræ	2	97.51.48,52	+14,664	η Capricorni	2	110.29.52,14	−13,842
ι^1 Libræ	3	109. 9.56,79	+14,014	α Cephei	28	28. 6.26,20	−15,040
⁎ Æ. $15^h. 8^m. 10^s.$	1	97.14.54,17	+13,658	α Cephei R.	28	26,26	
o^2 Libræ	1	104.32.35,32	+13,309	α Cephei SP.	1	26,35	
μ Bootis	1	52. 2.37,91	+13,013	α Cephei SP. R.	1	26,10	
α Coronæ Borealis	4	62.43.43,72	+12,375	ζ Capricorni	4	113. 6.59,71	−15,180
α Coronæ Borealis R.	4	44,00		⁎ Æ. $21^h. 19^m. 45^s.$	2	75.24.12,91	−15,340
α Serpentis	2	83. 3.10,58	+11,788	β Aquarii	16	96.17.17,61	−15,499
α Serpentis R.	2	11,80		β Aquarii R.	16	18,13	
β Serpentis	1	74. 3.36,35	+11,615	β Cephei	9	20. 9.29,37	−15,708
ε Serpentis	2	85. 1.23,95	+11,327	β Cephei R.	9	29,21	
γ Serpentis	1	73.47.53,01	+12,182	β Cephei SP.	1	29,04	
ψ Libræ	2	103.47.58,95	+10,866	β Cephei SP. R.	1	28,94	
ζ Ursæ Minoris	5	11.42.16,81	+10,747	ε Capricorni	2	110.11.46,40	−15,770
ζ Ursæ Minoris R.	5	16,74		γ Capricorni	4	107.23.54,99	−15,936
δ Scorpii	1	112. 8.54,66	+10,747	δ Capricorni	2	106.52. 3,04	−16,299
β^1 Scorpii	1	109.20.58,12	+10,355	α Aquarii	5	91. 6.47,20	−17,227
β^1 Scorpii R.	1	56,44		α Aquarii R.	5	46,57	
δ Ophiuchi	1	93.15.56,52	+ 9,607	δ Aquarii	2	106.41.26,63	−18,996
δ Ophiuchi R.	1	57,17		α Pegasi	4	75.40.32,05	−19,273
η Draconis	2	28. 6.46,68	+ 8,336	α Pegasi R.	4	31,23	
η Draconis R.	2	47,13		φ Aquarii	4	96.55.53,93	−19,479
ε Ursæ Minoris	2	7.42.18,75	+ 4,881	φ Aquarii R.	1	54,59	
ε Ursæ Minoris R.	2	19,24		ψ^3 Aquarii	5	100.30.21,81	−19,570
α Herculis	6	75.25. 0,43	+ 4,603	*n* Piscium	2	93.40.21,83	−19,960
α Herculis R.	6	1,29		*p* Piscium	3	94.27.56,51	−20,023
α Ophiuchi	8	77.18.52,25	+ 2,872	*s* Piscium	2	96.37.29,19	−20,040
α Ophiuchi R.	8	52,21		α Andromedæ	11	61.48.53,06	−20,043
μ^1 Sagittarii	1	111. 5.39,57	− 0,314	α Andromedæ R.	11	53,73	

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES

(THE LATTER CORRECTED FOR THE DISCORDANCE OF ZENITH POINTS
AND FOR THE ALTERATION OF THE CO-LATITUDE)

OF THE CENTERS OF THE

SUN, MOON, AND PLANETS,

OBSERVED IN THE YEAR 1836,

WITH THE

GREENWICH MEAN SOLAR TIME OF OBSERVATION,

AND COMPARED WITH THE PLACES INTERPOLATED FROM
THE NAUTICAL ALMANAC.

Greenwich Mean Solar Time of Transit of Center.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		h. m. s.	s.	s.		° ′ ″	″	″
Mar. 24 . 0 . 5 . 57,1						88 . 26 . 53,17	53,49	+ 0,32
29 . 0 . 4 . 24,4	I.	0 . 32 . 28,64	28,44	− 0,20	N.	86 . 29 . 32,20	31,98	− 0,22
31 . 0 . 3 . 47,7	II.	0 . 39 . 44,85	44,45	− 0,40				
April 2 . 0 . 3 . 10,7		0 . 47 . 0,94	0,84	− 0,10		84 . 56 . 50,98	50,18	− 0,80
4 . 0 . 2 . 34,7		0 . 54 . 17,86	17,78	− 0,08		84 . 11 . 0,69	0,18	− 0,51
5 . 0 . 2 . 17,1		0 . 57 . 56,75	56,53	− 0,22		83 . 48 . 14,04	13,87	− 0,17
8 . 0 . 1 . 25,0		1 . 8 . 54,25	54,05	− 0,20		82 . 40 . 34,26	33,77	− 0,49
14 . 23 . 59 . 33,5		1 . 34 . 38,27	38,04	− 0,23		80 . 7 . 13,05	11,65	− 1,40
15 . 23 . 59 . 18,9		1 . 38 . 20,17	19,95	− 0,22		79 . 45 . 54,39	53,25	− 1,14
20 . 23 . 58 . 11,6		1 . 56 . 55,50	55,34	− 0,16		78 . 1 . 59,76	59,43	− 0,33
21 . 23 . 57 . 59,4		2 . 0 . 39,86	39,67	− 0,19		77 . 41 . 46,71	46,83	+ 0,12
24 . 23 . 57 . 25,2	I.	2 . 11 . 55,22	55,27	+ 0,05				
29 . 23 . 56 . 38,5		2 . 30 . 51,14	50,84	− 0,30		75 . 7 . 51,51	52,70	+ 1,19
May 1 . 23 . 56 . 23,4		2 . 38 . 29,07	28,73	− 0,34		74 . 31 . 45,00	44,89	− 1,11
2 . 23 . 56 . 16,6		2 . 42 . 18,80	18,50	− 0,30		74 . 14 . 1,77	3,69	+ 1,92
5 . 23 . 55 . 59,7		2 . 53 . 51,53	51,25	− 0,28	N.	73 . 22 . 31,47	34,47	+ 3,00
6 . 23 . 55 . 55,1		2 . 57 . 43,49	43,32	− 0,17		73 . 5 . 56,19	57,17	+ 0,98
8 . 23 . 55 . 48,2		3 . 5 . 29,68	29,25	− 0,43		72 . 33 . 32,38	33,06	+ 0,68
9 . 23 . 55 . 45,2		3 . 9 . 23,26	23,10	− 0,16		72 . 17 . 46,02	46,86	+ 0,84
10 . 23 . 55 . 43,2		3 . 13 . 17,81	17,55	− 0,26		72 . 2 . 16,71	18,35	+ 1,64
11 . 23 . 55 . 41,9		3 . 17 . 13,01	12,58	− 0,43		71 . 47 . 5,42	7,75	+ 2,33
12 . 23 . 55 . 41,1		3 . 21 . 8,84	8,21	− 0,63		71 . 32 . 14,19	15,34	+ 1,15
13 . 23 . 55 . 40,4		3 . 25 . 4,68	4,42	− 0,26		71 . 17 . 41,36	41,64	+ 0,28
15 . 23 . 55 . 41,5		3 . 32 . 58,88	58,59	− 0,29		70 . 49 . 32,73	30,83	− 1,90
16 . 23 . 55 . 42,8		3 . 36 . 56,71	56,55	− 0,16		70 . 35 . 53,27	54,62	+ 1,35
17 . 23 . 55 . 44,6		3 . 40 . 55,05	55,04	− 0,01		70 . 22 . 36,87	37,92	+ 1,05
18 . 23 . 55 . 47,3		3 . 44 . 54,37	54,08	− 0,29		70 . 9 . 40,35	41,31	+ 0,96
19 . 23 . 55 . 50,2		3 . 48 . 53,83	53,67	− 0,16		69 . 57 . 4,36	5,11	+ 0,75
20 . 23 . 55 . 53,7		3 . 52 . 53,86	53,78	− 0,08		69 . 44 . 48,67	49,30	+ 0,63
24 . 23 . 56 . 12,8	I.	4 . 8 . 59,34	59,28	− 0,06	N.	68 . 59 . 16,39	16,88	+ 0,49
25 . 23 . 56 . 19,1		4 . 13 . 2,17	1,88	− 0,29		68 . 48 . 46,37	47,57	+ 1,20
26 . 23 . 56 . 25,6		4 . 17 . 5,20	4,95	− 0,25		68 . 38 . 40,11	40,26	+ 0,15
27 . 23 . 56 . 32,8		4 . 21 . 8,98	8,49	− 0,49		68 . 28 . 53,77	55,06	+ 1,29
29 . 23 . 56 . 47,8		4 . 29 . 17,15	16,92	− 0,23		68 . 10 . 30,40	31,74	+ 1,34
30 . 23 . 56 . 56,1		4 . 33 . 22,03	21,79	− 0,24		68 . 1 . 53,26	53,94	+ 0,68
June 1 . 23 . 57 . 14,0		4 . 41 . 33,16	32,80	− 0,36		67 . 45 . 45,92	47,23	+ 1,31
5 . 23 . 57 . 53,9	I.	4 . 57 . 59,33	59,40	+ 0,07		67 . 18 . 12,26	12,70	+ 0,44
7 . 23 . 58 . 16,2		5 . 6 . 14,86	14,75	− 0,11		67 . 6 . 46,70	47,67	+ 0,97
8 . 23 . 58 . 27,8		5 . 10 . 23,03	22,87	− 0,16		67 . 1 . 40,29	41,18	+ 0,89
10 . 23 . 58 . 51,8		5 . 18 . 40,21	39,90	− 0,31		66 . 52 . 39,63	40,97	+ 1,34
13 . 23 . 59 . 29,2	II.	5 . 31 . 7,40	7,02	− 0,38		66 . 42 . 13,30	13,75	+ 0,45
14 . 23 . 59 . 41,6		5 . 35 . 16,40	16,36	− 0,04		66 . 39 . 34,37	33,94	− 0,43
15 . 23 . 59 . 54,7		5 . 39 . 26,05	25,83	− 0,22		66 . 37 . 18,04	18,83	+ 0,79
17 . 0 . 0 . 7,5		5 . 43 . 35,52	35,37	− 0,15		66 . 35 . 27,06	28,53	+ 1,47
18 . 0 . 0 . 20,6		5 . 47 . 45,17	44,98	− 0,19		66 . 34 . 3,03	2,92	− 0,11
20 . 0 . 0 . 46,7	II.	5 . 56 . 4,50	4,21	− 0,29		66 . 32 . 26,90	26,41	− 0,49
23 . 0 . 1 . 25,5		6 . 8 . 32,99	32,83	− 0,16		66 . 33 . 6,33	7,99	+ 1,66
24 . 0 . 1 . 38,3		6 . 12 . 42,40	42,22	− 0,18		66 . 34 . 11,77	11,48	− 0,29
25 . 0 . 1 . 51,0		6 . 16 . 51,67	51,50	− 0,17		66 . 35 . 38,83	39,77	+ 0,94
28 . 0 . 2 . 28,4		6 . 29 . 18,84	18,44	− 0,40		66 . 42 . 30,87	32,15	+ 1,28
29 . 0 . 2 . 40,3	II.	6 . 33 . 27,38	27,07	− 0,31				
30 . 0 . 2 . 51,9		6 . 37 . 35,62	35,48	− 0,14		66 . 49 . 8,91	9,64	+ 0,73
July 1 . 0 . 3 . 3,5		6 . 41 . 43,77	43,66	− 0,11				
2 . 0 . 3 . 15,1		6 . 45 . 51,92	51,60	− 0,32		66 . 57 . 24,36	24,32	− 0,04
4 . 0 . 3 . 36,8		6 . 54 . 6,87	6,66	− 0,21		67 . 7 . 14,08	15,31	+ 1,23

Greenwich Mean Solar Time of Transit of Center.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
July 5. 0. 3.47,3		6.58.13,91	13,75	−0,16				
7. 0. 4. 7,4		7. 6.27,16	26,95	−0,21	S.	67.25. 0,75	0,89	+0,14
8. 0. 4.17,0		7.10.33,36	33,04	−0,32	N.	67.31.42,56	43,28	+0,72
9. 0. 4.26,2		7.14.39,10	38,74	−0,36				
11. 0. 4.43,1		7.22.49,18	48,97	−0,21		67.54. 8,32	9,97	+1,65
13. 0. 4.58,4		7.30.57,66	57,45	−0,21		68.11. 1,04	2,15	+1,11
21. 0. 5.39,4		8. 3.11,24	11,00	−0,24		69.33.10,98	10,41	−0,57
22. 0. 5.41,9						69.45. 0,85	1,70	+0,85
23. 0. 5.44,0	II.	8.11. 9,01	8,75	−0,26		69.57.11,90	13,09	+1,19
27. 0. 5.46,0	II.	8.26.57,18	57,11	−0,07				
28. 0. 5.44,8		8.30.52,66	52,68	+0,06		71. 3. 2,50	5,37	+2,87
29. 0. 5.43,2		8.34.47,50	47,67	+0,17		71.17.11,20	12,87	+1,67
Aug. 2. 0. 5.31,2					S.	72.16.43,46	45,24	+1,78
3. 0. 5.26,8		8.54.13,83	13,60	−0,23		72.32.20,96	22,44	+1,48
4. 0. 5.21,6		8.58. 5,14	5,03	−0,11		72.48.14,47	16,74	+2,27
6. 0. 5. 9,7		9. 5.46,35	46,16	−0,19		73.20.54,52	55,62	+1,10
8. 0. 4.55,3		9.13.25,01	24,99	−0,02		73.54.38,60	39,52	+0,92
9. 0. 4.47,4		9.17.13,74	13,55	−0,19		74.11.54,85	55,01	+0,16
10. 0. 4.38,9		9.21. 1,74	1,56	−0,18		74.29.25,61	25,71	+0,10
11. 0. 4.29,5		9.24.48,90	48,99	+0,09		74.47.11,29	11,61	+0,32
12. 0. 4.20,1		9.28.36,04	35,85	−0,19		75. 5.11,63	12,00	+0,37
13. 0. 4. 9,9		9.32.22,30	22,16	−0,14		75.23.26,59	26,79	+0,20
17. 0. 3.23,6	I.	9.47.22,10	21,90	−0,20		76.38.42,35	42,58	+0,23
18. 0. 3.10,7		9.51. 5,72	5,50	−0,22		76.58. 2,70	4,08	+1,38
22. 0. 2.14,2		10. 5.55,24	54,92	−0,32		78.17.30,05	29,96	−0,09
24. 0. 1.42,9		10.13.17,02	16,82	−0,20		78.58.20,43	20,46	+0,03
27. 0. 0.53,1		10.24.16,74	16,48	−0,26		80. 0.52,60	53,45	+0,85
29. 0. 0.18,0		10.31.34,71	34,36	−0,35		80.43.23,23	23,44	+0,21
30.23.59.41,3		10.38.51,00	50,93	−0,07		81.26.28,46	29,34	+0,88
31.23.59.22,8		10.42.28,94	28,76	−0,18		81.48.13,88	15,04	+1,16
Sept. 2.23.58.44,6		10.49.43,77	43,62	−0,15		82.32. 9,40	10,03	+0,63
4.23.58. 5,3		10.56.57,45	57,53	+0,08		83.16.33,48	34,63	+1,15
6.23.57.25,7		11. 4.10,84	10,61	−0,23		84. 1.26,29	26,33	+0,04
12.23.55.22,1		11.25.46,26	46,11	−0,15		86.18.14,75	16,02	+1,27
14.23.54.40,3	I.	11.32.57,41	57,14	−0,27				
15.23.54.19,2		11.36.32,84	32,58	−0,26				
18.23.53.15,9		11.47.19,00	18,82	−0,18				
19.23.52.54,9		11.50.54,50	54,28	−0,22		89. 0.47,46	49,02	+1,56
20.23.52.33,7		11.54.29,88	29,79	−0,09		89.24.10,71	11,92	+1,21
23.23.51.31,3		12. 5.16,91	16,84	−0,07		90.34.21,81	23,12	+1,31
25.23.50.50,5	II.	12.12.29,08	28,91	−0,17	S.	91.21.12,54	12,82	+0,28
27.23.50.10,5		12.19.42,03	41,80	−0,23		92. 8. 0,60	1,22	+0,62
Oct. 3.23.48 16,5		12.41.27,13	27,07	−0,06		94.27.50,40	51,02	+0,62
4.23.47.58,8		12.45. 5,87	5,80	−0,07		94.51. 0,55	0,52	−0,03
9.23.46.36,3		13. 3.25,96	25,65	−0,31		96.45.47,68	48,03	+0,35
10.23.46.20,9		13. 7. 7,04	6,98	−0,06		97. 8.31,41	31,57	+0,16
11.23.46. 6,4		13.10.49,06	48,80	−0,26		97.31. 8,24	7,73	−0,51
12.23.45.52,1		13.14.31,32	31,12	−0,20		97.53.37,61	38,33	+0,72
13.23.45.38,6		13.18.14,33	13,98	−0,35		98.16. 1,33	2,54	+1,21
16.23.45. 0,8		13.29.26,07	25,83	−0,24		99.22.30,59	30,84	+0,25
18.23.44.38,4		13.36.56,74	56,61	−0,13		100. 6. 7,95	9,14	+1,19
19.23.44.28,2		13.40.43,01	42,91	−0,10		100.27.45,23	44,95	−0,28
20,23.44.18,7		13.44.30,11	29,85	−0,26		100.49.10,96	11,35	+0,39
21.23.44. 9,6		13.48.17,50	17,43	−0,07		101.10.28,08	27,85	−0,23
27.23.43.30,7		14.11.17,81	17,79	−0,02				
30.23.43.21,6		14.22.58,37	58,21	−0,16		104.13.34,85	36,38	+1,53

Greenwich Mean Solar Time of Transit of Center.	Limb Observed.	Apparent R. A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Nov. 4 . 23 . 43 . 22,4		14 . 42 . 41,92	41,91	- 0,01		105 . 47 . 42,42	43,80	+ 1,38
6 . 23 . 43 . 28,9		14 . 50 . 41,52	41,26	- 0,26		106 . 23 . 35,06	35,81	+ 0,75
7 . 23 . 43 . 33,1		14 . 54 . 42,36	42,21	- 0,15		106 . 41 . 5,59	7,38	+ 1,79
8 . 23 . 43 . 38,3		14 . 58 . 44,12	44,01	- 0,11		106 . 58 . 20,36	21,72	+ 1,36
9 . 23 . 43 . 44,4		15 . 2 . 46,81	46,68	- 0,13		107 . 15 . 16,65	18,92	+ 2,27
13 . 23 . 44 . 17,3		15 . 19 . 6,05	5,76	- 0,29		108 . 20 . 2,97	4,94	+ 1,97
14 . 23 . 44 . 27,7		15 . 23 . 12,97	12,61	- 0,36		108 . 35 . 26,81	28,75	+ 1,94
16 . 23 . 44 . 50,5		15 . 31 . 28,96	28,79	- 0,17		109 . 5 . 13,41	16,46	+ 3,05
17 . 23 . 45 . 3,4		15 . 35 . 38,48	38,09	- 0,39		109 . 19 . 37,64	39,67	+ 2,03
20 . 23 . 45 . 46,5		15 . 48 . 11,33	10,86	- 0,47		110 . 0 . 40,56	41,69	+ 1,13
23 . 23 . 46 . 36,3		16 . 0 . 50,92	50,76	- 0,16		110 . 38 . 24,51	25,60	+ 1,09
24 . 23 . 46 . 54,4		16 . 5 . 5,70	5,61	- 0,09		110 . 50 . 12,96	14,81	+ 1,85
27 . 23 . 47 . 53,9	II.	16 . 17 . 54,97	54,66	- 0,31				
Dec. 2 . 23 . 49 . 46,5		16 . 39 . 30,65	30,38	- 0,27		112 . 10 . 20,14	21,76	+ 1,62
7 . 23 . 51 . 54,1		17 . 1 . 21,42	21,27	- 0,15		112 . 46 . 38,08	39,50	+ 1,42
9 . 23 . 52 . 48,8		17 . 10 . 9,36	9,07	- 0,29		112 . 58 . 1,98	3,71	+ 1,73
12 . 23 . 54 . 13,4		17 . 23 . 23,95	23,62	- 0,33		113 . 11 . 40,85	44,54	+ 3,69
14 . 23 . 55 . 11,3		17 . 32 . 15,06	14,79	- 0,27		113 . 18 . 31,63	33,05	+ 1,42
15 . 23 . 55 . 40,4		17 . 36 . 40,78	40,73	- 0,05		113 . 21 . 14,68	15,26	+ 0,58
16 . 23 . 56 . 9,9		17 . 41 . 7,00	6,85	- 0,15		113 . 23 . 28,09	29,37	+ 1,28
19 . 23 . 57 . 39,2		17 . 54 . 26,21	26,03	- 0,18		113 . 27 . 20,20	22,49	+ 2,29
22 . 23 . 59 . 9,0		18 . 7 . 45,95	45,75	- 0,20		113 . 27 . 0,31	1,11	+ 0,80
23 . 23 . 59 . 39,0		18 . 12 . 12,55	12,31	- 0,24		113 . 25 . 57,72	57,42	- 0,30

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Effect of increasing Semi-diameter $\frac{1}{1000}$	Greenwich Mean Solar Time of Transit of Center.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.	Effect of increasing Semi-diameter $\frac{1}{1000}$	Effect of increasing Parallax $\frac{1}{1000}$	Effect of assuming the Earth Spherical
d. h. m. s.		h. m. s.	s.	s.	s.	h. m. s.		° ′ ″	″	″	″	″	″
Mar. 24. 5.38.15,0	I.	5.48.37,34	37,53	+ 0,19	– ,069	5.39.23,4	S.	63.29.55,61	52,45	– 3,16	+ 0,90	+ 1,45	+ 12,50
29. 9.49.37,0	I.	10.20.21,60	21,41	– 0,19	– ,067	9.50.43,4	N.	74.12. 7,08	3,42	– 3,66	– 0,94	2,04	13,15
30.10.36.58,2	I.	11.11.46,60	46,54	– 0,06	– ,066	10.38. 4,0	N.	79.42.38,72	34,30	– 4,42	– 0,95	2,33	13,18
31.11.23.53,5	I.	12. 2.46,08	46,28	+ 0,20	– ,066	11.24.59,3	N.	85.53. 9,66	7,51	– 2,15	– 0,96	2,64	13,02
Apr. 2.13. 2.34,5	II.	13.47.27,17	27,37	+ 0,20	+ ,068	13. 1.26,6	S & N	98.58.61,15	59,51	– 1,64		3,17	12,03
3.13.54.19,2	II.	14.43.15,01	15,14	+ 0,13	+ ,070	13.53. 9,3	S.	105. 8. 3,01	3,75	+ 0,74	+ 0,99	3,36	11,25
25. 7.40. 1,8	I.	9.56.52,05	52,17	+ 0,12	– ,067	7.41. 8,2	N.	71.53.14,72	13,75	– 0,97	– 0,93	1,90	13,00
27. 9.13. 5,0	I.	11.38. 2,91	3,05	+ 0,14	– ,066	9.14.10,5	N.	82.44.56,93	55,86	– 1,07	– 0,95	2,48	11,08
29.10.47.47,5	I.	13.20.55,78	56,10	+ 0,32	– ,068	10.48.54,9	N.	95.45.26,90	27,39	+ 0,49	– 0,98	3,06	12,43
30.11.38.38,7	I.	14.15.53,74	54,42	+ 0,68	– ,070	11.39.48,2	S & N	102.15.45,52	44,59	– 0,93		3,30	11,76
May 1.12.35.46,3	II.	15.14.50,69	50,84	+ 0,15	+ ,072	12.34.34,1	S.	108. 9.57,91	59,89	+ 1,98	+ 1,00	3,47	10,94
2.13.34.57,6	II.	16.18. 5,98	6,48	+ 0,50	+ ,075	13.33.42,7	S.	112.55.55,15	54,93	– 0,22	+ 1,00	3,56	10,19
18. 2.15. 9,3	I.	6. 1.48,63	48,80	+ 0,17	– ,068								
19. 3. 5.59,8	I.	6.56.44,23	44,45	+ 0,22	– ,069								
20. 3.56.30,2	I.	7.51.19,10	19,47	+ 0,37	– ,068	3.57.38,2	N.	64. 8. 5,58	8,99	+ 3,41	– 0,90	1,45	12,52
22. 5.33.28,7	I.	9.36.24,87	24,99	+ 0,12	– ,066	5.34.34,7	N.	70. 8.55,10	58,86	+ 3,76	– 0,91	1,79	12,80
26. 8.35.40,4	I.	12.54.52,80	53,00	+ 0,20	– ,066	8.36.46,5	N.	92.28.41,93	47,41	+ 5,48	– 0,97	2,91	12,58
27. 9.24. 4,4	I.	13.47.23,01	23,25	+ 0,24	– ,068	9.25.12,5	N.	98.59. 7,42	13,64	+ 6,22	– 0,98	3,17	12,09
June 20. 5. 0.32,6	I.	10.57.41,75	42,14	+ 0,39	– ,064	5. 1.36,6	N.	78. 9.21,87	25,96	+ 4,09	– 0,92	2,19	12,82
24. 8. 2.33,3	I.	14.16. 2,61	3,00	+ 0,39	– ,069	8. 3.41,8	N.	102.23.10,07	16,52	+ 6,45	– 0,98	3,25	11,61
25. 8.55.40,0	I.	15.13.17,38	17,70	+ 0,32	– ,072	8.56.51,7	N.	108. 6.35,87	44,21	+ 8,34	– 0,99	3,44	10,97
26. 9.54.14,4	I.	16.16. 0,93	1,30	+ 0,37	– ,075	9.52.59,3	N.	112.50.26,85*	10,71	–16,14	– 1,01	3,56	10,33
28.12. 5.18,2	I.	18.35.22,51	23,21	+ 0,70	– ,079								
28.12. 7.56,1	II.	18.35.30,66	30,74	+ 0,08	+ ,079								
29.13.14.48,4	II.	19.46.31,61	32,03	+ 0,42	+ ,078	13.13.31,0	S.	115.55.23,85	26,35	+ 2,50	+ 1,01	3,63	9,73
July 6.19. 5. 6,2	II.	2. 5.35,53	35,26	– 0,27	+ ,063	19. 4. 3,0	N.	78.42.49,11	45,53	– 3,58	– 0,91	2,20	12,67
8.20.33.27,5	II.	3.42. 2,56	1,90	– 0,66	+ ,065								
16. 2.14.22,7	I.	9.53.35,94	36,77	+ 0,83	– ,065								
18. 3.42.40,9	I.	11.30. 0,27	0,99	+ 0,72	– ,064	3.43.44,2	N.	82. 8.14,95	12,43	– 2,52	– 0,92	2,37	12,70
27.11.54.59,3	I.	20.19.19,94	21,10	+ 1,16	– ,076	11.56.15,5	S.	114.34.43,94	42,69	– 1,25	+ 1,01	3,60	9,94
27.11.57.32,1	II.	20.19.27,32	27,92	+ 0,60	+ ,076								
Aug. 5.19.16.18,4	II.	4.15. 3,25	3,06	– 0,19	+ ,067	19.15.11,9	N.	66.58.23,43	22,89	– 0,54	– 0,90	1,60	12,59
7.20.55. 4,8	II.	6. 1.57,20	57,28	+ 0,08	+ ,069								
18. 4.40.58,7	I.	14.30.44,65	45,49	+ 0,84	– ,068	4.42. 6,3	N.	104.27.58,74	61,00	+ 2,26	– 0,96	3,23	11,10
21. 7.28.52,2	I.	17.31. 2,78	3,60	+ 0,82	– ,076	7.30. 8,1	S & N	116.29.63,95	59,40	– 4,55		3,55	9,46
24.10.38.50,3	I.	20.53.20,11	21,43	+ 1,32	– ,074	10.40. 4,3	S.	112.43.53,67	42,89	–10,78	+ 0,99	3,53	10,14
25.11.36.32,5	I.	21.55. 5,90	7,44	+ 1,54	– ,071	11.37.43,7	S.	107.55.41,06	29,55	–11,51	+ 0,99	3,43	10,86
26.12.31.59,9	II.	22.52.24,26	24,91	+ 0,65	+ ,069	12.30.51,4	S.	102. 4.58,73	44,92	–13,81	+ 0,98	3,26	11,59
27.13.21.12,5	II.	23.45.43,44	44,40	+ 0,96	+ ,067	13.20. 6,2	S & N	95.41.57,65	49,69	– 7,96		3,02	12,23
Sept. 5.20.30.10,7	II.	7.31.19,14	19,13	– 0,01	+ ,069	20.29. 2,2	S.	63.26.44,89	46,06	+ 1,17	+ 0,90	1,45	12,38
21. 9.25. 2,5	I.	21.29.41,51	42,66	+ 1,15	– ,072	9.26.13,9	S.	110.12.39,88	28,09	–11,79	+ 0,98	3,44	10,40
23.11. 8.33,3	I.	23.21.18,18	19,44	+ 1,26	– ,067	11. 9.40,0	S.	98.41.53,96	37,81	–16,15	+ 0,97	3,12	11,86
24.11.55.44,8	I.	0.12.32,61	33,70	+ 1,09	– ,065	11.56.50,4	S.	92.12.65,18	49,82	–15,36	+ 0,96	2,88	12,42
24.11.57.56,0	II.	0.12.37,71	38,16	+ 0,45	+ ,065								
26.13.28.38,9	II.	1.51.29,05	29,40	+ 0,35	+ ,065	13.27.34,2	N.	79.40. 6,25	0,14	– 6,11	– 0,94	+ 2,30	+ 12,96

* The calculations have been carefully examined. Possibly the observation was taken by mistake on the moveable wire, as left in the preceding observation of α Ophiuchi, which would cause an error of 22″,38.

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Effect of increasing Semi-diameter $\frac{1}{1000}$	Greenwich Mean Solar Time of Transit of Center.	Limb Observed.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.	Effect of increasing Semi-diameter $\frac{1}{1000}$	Effect of increasing Parallax $\frac{1}{1000}$	Effect of assuming the Earth Spherical.
d. h. m. s.		*h. m. s.*	*s.*	*s.*	*s.*	*h. m. s.*		° ′ ″	″	″	″	″	″
Oct. 2.18.21.48,3	II.	7. 9. 2,27	2,21	-0,06	+,069	18.20.39,5	S.	62.45.55,64	55,03	-0,61	+0,90	+1,41	+12,48
3.19.12. 9,0	II.	8. 3.28,53	28,20	-0,33	+,068	19.11. 1,0	S.	64.23.21,31	20,14	-1,17	+0,90	1,50	12,56
4.20. 0.59,9	II.	8.56.25,04	24,95	-0,09	+,067	19.59.53,0	S.	67.15.41,55	37,43	-4,12	+0,90	1,66	12,69
15. 4.17.35,6	I.	17.56. 5,41	6,17	+0,76	-,076								
18. 7.19.25,1	I.	21.10.10,63	11,24	+0,61	-,072	7.20.36,8	S.	111.49.44,16	37,86	-6,30	+0,97	3,44	10,07
19.						8.14.10,0	S.	106.54.41,77	34,62	-7,15	+0,97	3,33	10,77
20. 9. 2.44,5	I.	23. 1.35,64	36,11	+0,47	-,067	9. 3.51,2	S.	101. 7.20,43	10,93	-9,50	+0,96	3,17	11,47
21. 9.49.34,6	I.	23.52.28,46	29,04	+0,58	-,065	9.50.39,7	S.	94.50.68,16	57,64	-10,52	+0,95	2,96	12,09
22.10.34.41,0	I.	0.41.38,11	38,79	+0,68	-,064	10.35.45,3	S.	88.26.55,90	45,38	-10,52	+0,94	2,71	12,55
23.11.19.13,4	I.	1.30.14,33	15,22	+0,89	-,064	11.20.17,6	S.	82.13.17,76	7,05	-10,71	+0,94	2,43	12,83
Nov. 14. 5.14.55,0	I.	20.51.48,29	48,52	+0,23	-,073	5.16. 8,1	S.	113. 5.59,35	55,99	-3,36	+0,98	3,48	9,94
17. 7.47.38,5	I.	23.36.39,49	40,18	+0,69	-,065	7.48.43,7	S.	96.51.47,87	40,93	-6,94	+0,95	3,01	11,86
19. 9.16. 2,2	I.	1.13. 9,45	9,91	+0,46	-,064	9.17. 5,9	S.	84.22.23,86	15,03	-8,83	+0,93	2,51	12,67
20. 9.59.56,9	I.	2. 1. 8,26	8,39	+0,13	-,064	10. 1. 1,0	S.	78.30.37,55	30,46	-7,09	+0,92	2,24	12,83
23.12.23.10,0	II.	4.34.26,83	26,70	-0,13	+,068	12.22. 2,2	N.	65.22. 5,98	5,35	-0,63	-0,90	1,53	12,64
24.13.13.52,4	II.	5.29.13,24	13,46	+0,22	+,069	13.12.43,7	N.	63.11.54,21	56,73	+2,52	-0,90	1,41	12,52
30.18. 2.54,2	II.	10.42.46,59	46,02	-0,57	+,064	18. 1.50,6	S.	76.47.16,89	18,55	+1,66	+0,91	2,13	12,69
Dec. 2.19.28.21,1	II.	12.16.20,52	20,56	+0,04	+,064	19.27.17,5	S.	88.17.51,07	48,07	-3,00	+0,94	2,67	12,46
13. 4.56.31,8	I.	22.27.38,56	39,34	+0,78	-,069	4.57.40,7	S.	104.45.57,41	51,47	-5,94	+0,98	3,31	11,17
16. 7.15.15,9	I.	0.58.30,47	31,04	+0,57	-,064	7.16.19,7	S.	86. 7.32,44	22,92	-9,52	+0,94	2,59	12,60
18. 8.42.53,4	I.	2.34.16,23	16,16	-0,07	-,065	8.43.58,0	S.	74.46.23,59	18,65	-4,94	+0,92	2,05	12,81
20.10.16.23,9	I.	4.15.57,46	57,14	-0,32	-,067	10.17 31,1	N & S	66.23.13,75	10,91	-2,84		1,59	12,64
23.12.51. 1,1	II.	7. 0.38,58	38,55	-0,03	+,069	12.49.52,5	N.	62.40.47,37	49,25	+1,88	-0,89	1,37	12,41
24.13.41.21,0	II.	7.55. 4,21	3,93	-0,28	+,068	13.40.13,4	N & S	64. 8.29,58	32,08	+2,50		+1,46	+12,46

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		h. m. s.	s.	s.	° ′ ″	″	″
May 10. 0.39.49,6	I.	3.53.35,06	35,40	+0,34	68.16. 4,83	0,76	−4,07
12. 0.48.49,1	I.	4.10.29,22	29,54	+0,32	67.12.50,00	47,27	−2,73
13. 0.53.10,0	I.	4.18.47,37	47,74	+0,37	66.45. 6,07	2,13	−3,94
14. 0.57.23,4	I.	4.26.58,02	58,52	+0,50	66.19.57,54	53,50	−4,04
16. 1. 5.24,6	I.	4.42.53,60	53,91	+0,31	65.37.27,84	22,81	−5,03
17. 1. 9.10,1	I.	4.50.36,33	36,77	+0,44	65.19.59,57	56,57	−3,00
18. 1.12.45,1	I.	4.58. 8,42	8,69	+0,27	65. 4.61,98	58,83	−3,15
19. 1.16. 8,2	I.	5. 5.28,69	28,96	+0,27	64.52.27,66	25,29	−2,37
20. 1.19.19,1	I.	5.12.36,65	36,97	+0,32	64.42.12,17	10,95	−1,22
26. 1.33.38,8	I.	5.50.38,08	38,30	+0,22	64.24.12,50	13,66	+1,16
28. 1.36.26,3	I.	6. 1.19,17	19,11	−0,06			
June 8. 1.31.13,6	I.	6.39.27,83	28,02	+0,19			
July 25.22.50.19,4	II.	7. 7.21,46	21,76	+0,30	68. 0.20,97	20,45	−0,52
Aug. 2.23.20.46,8					68.51.37,51	39,83	+2,32
3.23.25.17,7	II.	8.17.54,51	55,14	+0,63	69. 9.42,10	43,38	+1,28
5.23.34.28,4	II.	8.34.59,86	60,44	+0,58	69.53.40,63	41,19	+0,56
7.23.43.37,8	II.	8.52. 3,88	4,70	+0,82	70.47.26,55	28,51	+1,96
8.23.48. 8,4	II.	9. 0.31,82	32,64	+0,82	71.17.42,92	44,49	+1,57
31. 0.57.56,9	I.	11.37.16,33	16,49	+0,16	86.53.38,12	42,06	+3,94
Sept. 1. 0.59.50,2	I.	11.43. 6,41	6,69	+0,28	87.39. 3,09	6,16	+3,07
5. 1. 6.35,0	I.	12. 5.38,62	38,55	−0,07	90.37.44,62	47,77	+3,15
24. 1.22.55,1	I.	13.36.55,93	55,82	−0,11	102.45. 4,88	9,49	+4,61
Nov. 6.22.33.31,7	II.	13.40.32,62	31,98	−0,64	98. 0.41,72	38,85	−2,87
7.22.33.44,2	II.	13.44.41,74	41,32	−0,42	98.24.46,91	44,68	−2,23
9.22.34.57,6	II.	13.53.48,44	48,02	−0,42	99.19.29,18	28,72	−0,46
13.22.39.44,6	II.	14.14.22,50	22,23	−0,27	101.25.41,75	41,06	−0,69
14.22.41.17,5	II.	14.19.52,27	51,94	−0,33	101.59. 8,60	8,55	−0,05
17.22.46.31,2					103.40.54,01	53,24	−0,77

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF VENUS. 1836.

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		h. m. s.	s.	s.	° ′ ″	″	″
March 24. 2.33. 9,5	I.	2.41.55,82	56,20	+0,38	73. 7.34,72	35,90	+1,18
April 2. 2.39.23,7	I.	3.23.40,14	40,71	+0,57	69.42.35,80	35,64	−0,16
8. 2.44. 2,3	I.	3.51.58,81	58,96	+0,15	67.47.38,66	39,89	+1,23
16. 2.50.39,1	I.	4.30. 9,22	9,49	+0,27	65.45.13,89	15,82	+1,93
25. 2.58.13,5	I.	5.13.13,86	14,16	+0,30	64.13.31,42	34,32	+2,90
27. 2.59.50,9	I.	5.22.44,70	44,96	+0,26	64. 0. 5,47	6,20	+0,73
May 2. 3. 3.41,3	I.	5.46.18,48	18,88	+0,40	63.37.24,38	30,15	+5,77
6. 3. 6.26,7	I.	6. 4.50,68	51,04	+0,36			
7. 3. 7. 4,8	I.	6. 9.25,38	25,75	+0,37	63.30.28,06	31,80	+3,74
9. 3. 8.16,4	I.	6.18.30,35	30,54	+0,19	63.31.55,21	60,78	+5,57
10. 3. 8.49,7	I.	6.23. 0,26	0,44	+0,18	63.33.33,93	38,57	+4,64
11. 3. 9.20,9	I.	6.27.28,13	28,56	+0,43	63.35.46,36	51,76	+5,40
12. 3. 9.50,8	I.	6.31.54,65	54,79	+0,14	63.38.34,25	39,55	+5,30

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
May 13. 3.10.18,2	I.	6.36.18,69	19,05	+0,36	63.41.56,78	61,64	+4,86
14. 3.10.44,1	I.	6.40.41,19	41,24	+0,05	63.45.53,71	57,68	+3,97
16. 3.11.28,3	I.	6.49.18,74	19,04	+0,30	63.55.26,22	29,11	+2,89
17. 3.11.46,9	I.	6.53.33,90	34,42	+0,52	64. 0.58,85	63,40	+4,55
18. 3.12. 3,4	I.	6.57.47,06	47,34	+0,28	64. 7. 3,61	9,29	+5,68
20. 3.12.28,1	I.	7. 6. 4,97	5,34	+0,37	64.20.48,21	53,08	+4,87
21. 3.12.36,3	I.	7.10. 9,75	10,22	+0,47	64.28.24,38	29,57	+5,19
26. 3.12.33,6	I.	7.29.49,81*	48,83	−0,98	65.13.23,03	28,83	+5,80
27. 3.12.21,8	I.	7.33.34,55	34,66	+0,11	65.23.41,47	46,43	+4,96
28. 3.12. 7,7	I.	7.37.16,98	16,98	0,00	65.34.22,89	28,02	+5,13
30. 3.11.27,9	I.	7.44.30,26	30,54	+0,28	65.56.53,98	59,41	+5,43
31. 3.11. 2,6	I.	7.48. 1,45	1,58	+0,13	66. 8.41,93	47,40	+5,47
June 2. 3. 9.59,7	I.	7.54.51,52	51,63	+0,11	66.33.18,03	23,29	+5,26
8. 3. 5. 6,3	I.	8.13.36,80	37,19	+0,39	67.53.54,41	58,66	+4,25
11. 3. 1.35,1	I.	8.21.54,69	55,01	+0,32	68.37. 9,38	14,96	+5,58
14. 2.57.15,5	I.	8.29.24,13	24,37	+0,24	69.21.45,93	50,75	+4,82
15. 2.55.37,3	I.	8.31.42,19	42,62	+0,43	69.36.49,69	54,85	+5,16
23. 2.38.38,9	I.	8.46.13,65	14,23	+0,58			
25. 2.33.12,1	I.	8.48.39,09	39,61	+0,52	72. 7.37,66	40,26	+2,60
28. 2.24. 0,8	I.	8.51.16,07	16,63	+0,56	72.50.44,74	49,97	+5,23
30. 2.17.10,5	I.	8.52.17,76	18,41	+0,65	73.18.27,50	29,87	+2,37
July 1. 2.13.31,8	I.	8.52.35,08	35,89	+0,81	73.31.51,82	53,88	+2,06
2. 2. 9.44,2	I.	8.52.43,46	44,22	+0,76	73.44.57,85	60,48	+2,63
4. 2. 1.40,9	I.	8.52.32,00	32,98	+0,98	74.10.11,57	13,20	+1,63
5. 1.57.25,5	I.	8.52.12,43	13,23	+0,80	74.22.14,06	16,70	+2,64
8. 1.43.41,7	I.	8.50.16,06	16,78	+0,72	74.55.58,79	59,42	+0,63
11. 1.28.32,8	I.	8.46.54,50	55,20	+0,70	75.25.36,62	36,05	−0,57
13. 1.17.41,4	I.	8.43.54,46	55,29	+0,83	75.42.51,87	49,07	−2,80
16. 1. 0.21,9	I.	8.38.21,80	22,70	+0,90	76. 4.38,37	33,89	−4,48
18. 0.48.12,2	I.	8.34. 3,31	4,27	+0,96			
22. 0.22.47,7	I.				76.32.38,84	35,75	−3,09
23. 0.15.17,9	I.	8.20.46,40	47,08	+0,68	76.35.16,55	15,06	−1,49
29.23.30.51,7	II.	8. 3.44,97	45,65	+0,68	76.38.66,50	59,72	−6,78
Aug. 2.23. 6.13,9	II.	7.54.49,39	49,70	+0,31	76.31.20,90	14,44	−6,46
3.23. 0.21,4	II.	7.52.52,50	52,96	+0,46	76.28.31,49	25,45	−6,04
5.22.49. 1,6	II.	7.49.23,90	24,20	+0,30	76.21.64,04	56,56	−7,48
7.22.38.16,9	II.	7.46.30,67	31,10	+0,43	76.14.39,59	31,16	−8,43
8.22.33. 8,8	II.	7.45.18,26	18,66	+0,40	76.10.39,04	30,87	−8,17
9.22.28.10,7	II.	7.44.15,96	15,89	−0,07	76. 6.30,47	21,17	−9,30
11.22.18.42,9	II.	7.42.39,69	39,80	+0,11	75.57.49,95	40,37	−9,58
12.22.14.13,9	II.	7.42. 6,54	6,58	+0,04	75.53.22,17	12,57	−9,60
16.21.57.55,3	II.	7.41.31,56	31,47	−0,09	75.35.14,50	6,87	−7,63
17.21.54.14,4	II.	7.41.46,65	46,63	−0,02	75.30.47,82	39,37	−8,45
26.21.27.39,3	II.	7.50.36,38	36,30	−0,08	74.56.35,41	28,15	−7,26
28.21.23.11,2	II.	7.54. 0,75	0,48	−0,27	74.51.21,44	14,74	−6,70
30.21.19.10,3	II.	7.57.52,27	52,01	−0,26	74.47.18,50	12,33	−6,17
31.21.17.19,4	II.	7.59.57,65	57,43	−0,22	74.45.47,24	40,12	−7,12
Sept. 5.21. 9.32,0	II.	8.11.51,87	51,77	−0,10	74.43.28,64	22,69	−5,95
6.21. 8.14,5	II.	8.14.30,74	30,50	−0,24	74.44.10,68	4,89	−5,79
7.21. 7. 1,5	II.	8.17.14,07	13,98	−0,09			
12.21. 2. 1,9	II.	8.31.56,52	56,24	−0,28	74.57.16,71	13,16	−3,55
14.21. 0.28,7	II.	8.38.16,15	16,00	−0,15	75. 5.13,97	9,53	−4,44
19.20.57.31,8	II.	8.55. 1,66	1,42	−0,24	75.33.14,24	11,09	−3,15
23.20.55.58,9	II.	9. 9.14,72	14,56	−0,16	76. 4.15,75	13,56	−2,19
27.20.55. 1,5	II.	9.24. 3,47	3,15	−0,32	76.43. 3,98	2,52	−1,46
29.20.54.43,9	II.	9.31.38,91	38,67	−0,24	77. 5.22,48	21,31	−1,17
Oct. 3.20.54.27,6	II.	9.47. 8,84	8,56	−0,28	77.55.44,73	42,28	−2,45
4.20.54.27,0	II.	9.51. 4,81	4,47	−0,34	78. 9.29,96	27,47	−2,49

* The Apparent Æ. is undoubtedly 1^s too large.

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		*h. m. s.*	*s.*	*s.*	° ′ ′	″	″
Oct. 6 . 20 . 54 . 29,0	II.	9 . 58 . 59,92	59,84	− 0,08	78 . 38 . 20,54	20,25	− 0,29
10 . 20 . 54 . 46,3	II.	10 . 15 . 3,57	3,04	− 0,53	79 . 41 . 24,06	23,53	− 0,53
11 . 20 . 54 . 52,8	II.	10 . 19 . 6,65	6,08	− 0,57	79 . 58 . 14,62	13,22	− 1,40
13 . 20 . 55 . 8,0	II.	10 . 27 . 14,97	14,53	− 0,44	80 . 33 . 8,34	6,13	− 2,21
18 . 20 . 55 . 57,9	II.	10 . 47 . 47,81	47,63	− 0,18	82 . 7 . 6,28	6,28	0,00
19 . 20 . 56 . 9,8	II.	10 . 51 . 56,34	56,06	− 0,28	82 . 27 . 1,20	0,37	− 0,83
30 . 20 . 58 . 54,0	II.	11 . 38 . 3,15	2,61	− 0,54	86 . 26 . 46,70	47,32	+ 0,62
Nov. 6 . 21 . 1 . 7,8	II.	12 . 7 . 53,25	52,67	− 0,58	89 . 15 . 16,07	16,50	+ 0,43
7 . 21 . 1 . 28,8	II.	12 . 12 . 10,80	10,25	− 0,55			
9 . 21 . 2 . 12,2	II.	12 . 20 . 47,42	46,87	− 0,55	90 . 30 . 3,28	4,58	+ 1,30
13 . 21 . 3 . 45,1	II.	12 . 38 . 6,90	6,29	− 0,61	92 . 11 . 24,70	25,98	+ 1,28
14 . 21 . 4 . 10,0	II.	12 . 42 . 28,44	27,53	− 0,91	92 . 36 . 57,92	58,88	+ 0,96
16 . 21 . 5 . 0,6	II.	12 . 51 . 12,27	11,77	− 0,50	93 . 28 . 14,21	14,58	+ 0,37
17 . 21 . 5 . 27,4	II.	12 . 55 . 35,66	34,84	− 0,82	93 . 53 . 55,03	55,98	+ 0,95
18 . 21 . 5 . 54,4	II.	12 . 59 . 59,36	58,56	− 0,80	94 . 19 . 39,18	38,88	− 0,30
23 . 21 . 8 . 20,5	II.	13 . 22 . 8,58	7,87	− 0,71	96 . 28 . 8,66	8,68	+ 0,02
Dec. 6 . 21 . 16 . 21,3	II.	14 . 21 . 26,00	25,30	− 0,70	101 . 52 . 8,28	9,21	+ 0,93
9 . 21 . 18 . 36,4	II.	14 . 35 . 31,21	30,42	− 0,79	103 . 2 . 35,94	36,02	+ 0,08
12 . 21 . 21 . 1,6	II.	14 . 49 . 46,47	45,52	− 0,95	104 . 10 . 36,96	38,64	+ 1,68
13 . 21 . 21 . 52,1	II.	14 . 54 . 33,68	32,85	− 0,83	104 . 32 . 40,92	43,64	+ 2,72
14 . 21 . 22 . 44,0	II.	14 . 59 . 22,24	21,34	− 0,90	104 . 54 . 28,92	29,55	+ 0,63
15 . 21 . 23 . 36,8	II.	15 . 4 . 11,77	11,02	− 0,75	105 . 15 . 55,43	55,45	+ 0,02
16 . 21 . 24 . 31,5	II.	15 . 9 . 3,18*	1,88	− 1,30	105 . 37 . 0,38	0,56	+ 0,18
19 . 21 . 27 . 20,7	II.	15 . 23 . 42,49	41,67	− 0,82	106 . 38 . 2,31	3,08	+ 0,77

* An unsatisfactory observation. See the Transit.

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF MARS. 1836.

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
June 27 . 21 . 1 . 17,4	II.	3 . 27 . 37,99	37,21	− 0,78	71 . 40 . 10,54	9,29	− 1,25
July 1 . 20 . 57 . 9,0	II.	3 . 39 . 15,15	14,39	− 0,76			
3 . 20 . 55 . 4,5					70 . 36 . 22,91	24,27	+ 1,36
5 . 20 . 53 . 2,1	II.	3 . 50 . 53,80	53,05	− 0,75			
6 . 20 . 52 . 0,5	II.	3 . 53 . 48,57	47,91	− 0,66			
8 . 20 . 49 . 57,8	II.	3 . 59 . 38,64	37,83	− 0,81			
10 . 20 . 47 . 55,0	II.	4 . 5 . 28,60	27,92	− 0,68			
12 . 20 . 45 . 52,3	II.	4 . 11 . 18,74	18,11	− 0,63	69 . 13 . 34,10	31,94	− 2,16
15 . 20 . 42 . 48,6	II.	4 . 20 . 4,16	3,40	− 0,76	68 . 49 . 27,19	24,83	− 2,36
17 . 20 . 40 . 45,8	II.	4 . 25 . 54,18	53,51	− 0,67	68 . 34 . 21,48	19,92	− 1,56
22 . 20 . 35 . 37,9	II.	4 . 40 . 28,23	27,97	− 0,26	68 . 0 . 8,83	7,11	− 1,72
26 . 20 . 32 . 30,2					67 . 36 . 23,38	21,49	− 1,89
27 . 20 . 30 . 28,2					67 . 30 . 58,07	55,19	− 2,88
Aug. 1 . 20 . 25 . 16,7					67 . 6 . 46,35	43,77	− 2,58
2 . 20 . 24 . 13,9	II.	5 . 12 . 24,44	23,91	− 0,53	67 . 2 . 33,26	29,57	− 3,69
3 . 20 . 23 . 10,8	II.	5 . 15 . 17,75	17,25	− 0,50	66 . 58 . 30,96	27,27	− 3,69
7 . 20 . 18 . 56,0					66 . 44 . 21,37	16,85	− 4,52

Greenwich Mean Solar Time of Transit of Limb.	Limb Observed.	Apparent R.A. of Center.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.		*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
Aug. 8.20.17.52,5	II.	5.29.41,36	40,94	– 0,42	66.41.18,41	13,75	– 4,66
9.20.16.48,4	II.	5.32.33,59	32,98	– 0,61	66.38.27,33	22,45	– 4,88
17.20. 8. 2,8	II.	5.55.18,97	18,48	– 0,49	66.22.34,55	28,22	– 6,33
24.20. 0. 4,4	II.	6.14.55,20	54,62	– 0,58	66.18.27,06	20,70	– 6,36
26.19.57.43,7	II.	6.20.27,22	26,97	– 0,25	66.18.52,29	46,39	– 5,90
28.19.55.21,8	II.	6.25.58,02	57,55	– 0,47	66.19.59,99	53,79	– 6,20
31.19.51.45,1	II.	6.34.10,40	9,93	– 0,47	66.22.56,19	50,98	– 5,21
Sept. 5.19.45.33,8	II.	6.47.40,88	40,47	– 0,41	66.31. 7,36	1,67	– 5,69
12.19.36.30,3	II.	7. 6.11,69	11,23	– 0,46	66.48.57,02	51,95	– 5,07
23.19.21.11,0	II.	7.34.11,98	11,84	– 0,14	67.30.16,36	9,23	– 7,13
27.19.15.15,5	II.	7.44. 1,70	1,55	– 0,15	67.48.44,20	37,92	– 6,28
Oct. 3.19. 5.59,2	II.	7.58.23,18	23,01	– 0,17	68.19.18,41	13,31	– 5,10
4.19. 4.23,8	II.	8. 0.44,10	43,73	– 0,37	68.24.42,47	36,91	– 5,56
12.18.51. 7,6	II.	8.18.58,15	57,87	– 0,28	69.10.21,51	13,40	– 8,11
19.18.38.41,9	II.	8.34. 6,33	6,15	– 0,18	69.52.53,65	47,00	– 6,65
20.18.36.51,5	II.	8.36.12,19	11,95	– 0,24	69.58.65,54	59,50	– 6,04
Nov. 2.18.11.19,8	II.	9. 1.51,43	51,15	– 0,28	71.20.33,92	26,40	– 7,52
3.18. 9.13,8	II.	9. 3.41,69	41,59	– 0,10	71.26.45,05	37,40	– 7,65
6.18. 2.49,3	II.	9. 9. 5,78	5,46	– 0,32	71.44.64,59	57,10	– 7,49
7.18. 0.38,5	II.	9.10.51,12	50,85	– 0,27	71.50.65,47	58,50	– 6,97

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF VESTA. 1836.

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
March 25.11.43. 4,3	11.57.17,02	19,45	+ 2,43			
26.11.38.13,9	11.56.22,45	25,11	+ 2,66	76.21.17,26	29,29	+ 12,03
30.11.18.58,6	11.52.50,16	52,82	+ 2,66	76. 0.28,84	40,28	+ 11,44
31.11.14.11,4	11.51.58,73	61,37	+ 2,64	75.55.52,12	63,87	+ 11,75
April 4.10.55.11,4	11.48.41,79	44,04	+ 2,25	75.39.57,67	68,36	+ 10,69
7.10.41. 9,0				75.30.43,65	54,94	+ 11,29
9.10.31.49,4	11.44.58,73	61,17	+ 2,44	75.25.56,11	65,64	+ 9,53
11.10.22.37,5	11.43.38,40	40,85	+ 2,45	75.22.11,26	20,63	+ 9,37
15.10. 4.31,1	11.41.15,24	17,54	+ 2,30	75.17.54,74	64,61	+ 9,87
22. 9.33.51,0	11.38. 6,08			75.20.39,50		
25. 9.21. 1,8	11.37. 4,39*					
29. 9. 4.35,3	11.36.21,37			75.35.38,68		
30. 9. 0.31,9	11.36.13,92			75.38.43,30		
May 4. 8.44.34,0	11.35.59,54			75.53.11,87		
6. 8.36.45,3	11.36. 2,77			76. 1.40,77		
9. 8.25.15,8	11.36.20,99			76.15.55,74		
10. 8.21.29,1				76.21. 2,75		
11. 8.17.44,1	11.36.41,19			76.26.23,19		
12. 8.14. 0,9	11.36.53,95			76.31.51,14		
13. 8.10.19,3	11.37. 8,24			76.37.43,95		
14. 8. 6.44,3	11.37.29,25			76.43.25,57		
16. 7.59.28,7				76.55.37,56		
18. 7.52.15,5	11.38.44,30			77. 8.30,84		
19. 7.48.43,6	11.39. 8,37					
21. 7.41.44,1	11.40. 0,88			77.29.21,30		

* Perhaps not Vesta.

Greenwich Mean Solar Time of Transit SP.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
July 20.13.23.28,2				75.24.55,20	31,13	-24,07
27.12.51. 1,7	21.14.18,61	20,19	+1,58	75.58.69,70	48,70	-21,00
30.12.37. 0,8	21.12. 5,12	6,74	+1,62	76.17.30,26	3,79	-26,47
Aug. 3.12.18.16,8				76.44.60,84	39,38	-21,46
6.12. 4. 9,0	21. 6.43,77	45,29	+1,52	77. 7.63,26	43,97	-19,29
8.11.54.44,7	21. 5.11,07	12,25	+1,18	77.24.40,01	12,66	-27,35
9.11.50. 1,9	21. 4.24,07	25,74	+1,67	77.32.64,99	46,26	-18,73
10.11.45.20,0	21. 3.37,92	39,29	+1,37	77.41.56,60	32,15	-24,45
12.11.35.55,7	21. 2. 5,24	6,75	+1,51	77.59.66,17	40,25	-25,92
13.11.31.13,9	21. 1.19,22	20,75	+1,53	78. 9.35,38	1,94	-33,44
19.11. 3. 9,8	20.56.49,73	51,08	+1,35	79. 8.82,94	58,23	-24,71
25.10.35.22,3	20.52.37,12	38,43	+1,31	80.14.51,49	25,41	-26,08
29.10.17. 3,9	20.50. 1,87	3,22	+1,35	81. 0.49,37	26,51	-22,86
31.10. 7.59,5	20.48.49,11	50,30	+1,19	81.24.26,21	0,50	-25,71
Sept. 1.10. 3.28,2	20.48.13,62	15,12	+1,50	81.35.82,31	54,50	-27,81
2. 9.58.58,0	20.47.39,25	40,84	+1,59	81.47.80,76	52,50	-28,26
5. 9.45.34,9				82.24.30,35	7,10	-23,25
6. 9.41. 7,1	20.45.31,58	33,14	+1,56	82.36.44,00	17,40	-26,60
9. 9.27.54,5	20.44. 6,55	7,95	+1,40	83.12.79,74	58,80	-20,94
13. 9.10.32,7	20.42.28,02	29,61	+1,59	84. 2.23,93	3,50	-20,43
23. 8.28.13,1	20.39.27,08			86. 3.21,44		
24. 8.24.24,6	20.39.34,43			86.15.12,68		
30. 8. 0.16,2	20.39. 1,43					
Oct. 3. 7.48.28,8	20.39. 1,75			87.57.42,84		
15. 7. 3. 6,3	20.40.50,46			90. 0.49,59		

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF CERES. 1836.

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
Aug. 19.13.52. 0,0	23.46. 7,68	7,95	+0,27	108.19.35,30	26,89	- 8,41
24.13.29. 9,0	23.42.55,79	55,81	+0,02	108.53.27,21	22,19	- 5,02
31.12.56.31,7	23.37.48,99	49,07	+0,08	109.38.64,23	58,30	- 5,93
Sept. 2.12.47. 5,8	23.36.14,59	14,96	+0,37	109.51.22,96	18,80	- 4,16
9.12.13.51,5	23.30.30,74	30,80	+0,06	110.30.61,23	57,01	- 4,22
10.12. 9. 5,2	23.29.40,26	40,45	+0,19	110.36.10,14	4,62	- 5,52
13.11.54.46,2	23.27. 8,51	8,88	+0,37	110.50.26,94*	31,32	+4,38
14.11.50. 0,1	23.26.18,17	18,38	+0,21	110.55. 7,87	0,53	- 7,34
20.11.21.26,4	23.21.19,11	19,38	+0,27	111.18. 9,67*	10,34	+0,67
28.10.43.46,8	23.15. 5,78	5,95	+0,17	111.38.23,36	14,37	- 8,99
30.10.34.29,0	23.13.39,59	39,61	+0,02	111.41.21,54	13,88	- 7,66
Oct. 3.10.20.38,5	23.11.36,44	36,80	+0,36	111.44.18,46	10,69	- 7,77
4.10.16. 4,0				111.44.51,86	44,89	- 6,97
11. 9.44.30,5	23. 6.54,94			111.43. 9,84		
15. 9.26.55,5	23. 5. 3,24			111.37.37,13		
27. 8.36.17,9	23. 1.35,97					

* No error of calculation. The first observation was altered 1′; perhaps, therefore, a wrong star was observed.

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
Nov. 3. 8.17.14,4				110.34.10,12		
5. 8. 0.29,4				110.24. 5,28		
7. 7.52.48,0	23. 1.21,04			110.13.44,30		
8. 7.48.59,0	23. 1.28,03			110. 8.22,99		
10. 7.41.24,3	23. 1.45,16			109.57. 9,99		
14. 7.26.31,9	23. 2.36,60			109.33.18,72		
24. 6.50.46,7	23. 6.11,00			108.26.11,49		

RIGHT ASCENSIONS AND NORTH POLAR DISTANCES OF JUPITER. 1836.

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
March 24. 6.19.52,5	6.29.15,63	15,45	−0,18	66.29.50,44	50,50	+0,06
25. 6.16.15,7	6.29.34,77	34,65	−0,12	66.29.60,01	59,50	−0,51
29. 6. 1.56,0	6.30.58,90	58,72	−0,18	66.30.42,78	42,30	−0,48
30. 5.58.22,8	6.31.21,64	21,52	−0,12	66.30.55,92	54,80	−1,12
31. 5.54.50,2	6.31.45,06	45,01	−0,05	66.31. 9,27	8,20	−1,07
April 11. 5.16.36,7	6.36.47,43	47,22	−0,21	66.34.28,10	29,19	+1,09
22. 4.39.36,4	6.43. 3,04	2,80	−0,24	66.39.40,35	42,39	+2,04
23. 4.36.18,0	6.43.40,67	40,20	−0,47	66.40.16,91	17,09	+0,18
25. 4.29.41,8	6.44.56,53	56,52	−0,01			
29. 4.16.36,3	6.47.35,09	34,97	−0,12	66.44.10,14	8,69	−1,45
May 10. 3.41.12,1	6.55.27,17	26,90	−0,27	66.53. 6,66	5,88	−0,78
11. 3.38. 1,3	6.56.12,45	12,22	−0,23	66.53.57,37	62,28	+4,91
12. 3.34.51,2	6.56.58,40	57,91	−0,49	66.54.58,14	59,98	+1,84
14. 3.28.31,4	6.58.30,61	30,38	−0,23	66.56.60,40	59,48	−0,92
17. 3.19. 4,5	7. 0.51,80	51,71	−0,09	67. 0. 7,09	8,78	+1,69
18. 3.15.56,4	7. 1.39,77	39,48	−0,29	67. 1.17,08	14,58	−2,50
19. 3.12.48,6	7. 2.28,06	27,57	−0,49	67. 2.23,39	21,68	−1,71
20. 3. 9.40,9	7. 3.16,35	15,97	−0,38	67. 3.30,12	30,28	+0,16
21. 3. 6.33,3	7. 4. 4,87	4,68	−0,19	67. 4.39,83	40,18	+0,35
26. 2.51. 1,1	7. 8.12,84	12,53	−0,31	67.10.52,07	50,78	−1,29
28. 2.44.50,2	7. 9.54,03	53,54	−0,49	67.13.29,68	28,98	−0,70
30. 2.38.40,1	7.11.36,02	35,55	−0,47	67.16.14,98	12,98	−2,00
June 15. 1.49.49,9	7.25.42,77	42,18	−0,59			
Aug. 30.21.57. 6,6	8.35.56,13	55,53	−0,60	70.55. 4,12	5,83	+1,71
Sept. 2.21.47.47,8	8.38.25,47	25,16	−0,31	71. 3.52,42	55,48	+3,06
7.21.32.11,8	8.42.29,71	29,32	−0,39			
19.20.54.14,9	8.51.45,14	44,64	−0,50	71.53. 0,99	2,05	+1,06
23.20.41.24,9	8.54.39,28	38,89	−0,39	72. 4.10,27	10,15	−0,12
27.20.28.28,9	8.57.27,40	27,12	−0,28	72.15. 4,64	3,46	−1,18
Oct. 3.20. 8.53,1	9. 1.27,67	27,34	−0,33	72.30.48,35	48,26	−0,09
4.20. 5.35,6	9. 2. 6,24	5,89	−0,35	72.33.21,55	21,16	−0,39
11.19.42.20,8	9. 6.23,44	22,86	−0,58	72.50.29,80	28,06	−1,74
13.19.35.37,8	9. 7.32,40	31,92	−0,48	72.55. 7,88	5,83	−2,05
19.19.15.16,6	9.10.47,26	46,77	−0,49	73. 8.13,02	12,97	−0,05
30.18.37. 6,1	9.15.52,59	52,18	−0,41	73.28.46,66	46,17	−0,49
Nov. 2.18.26.28,8	9.17. 3,23	2,93	−0,30	73.33.29,15	29,07	−0,08
3.18.22.55,3	9.17.25,69	25,26	−0,43	73.34.57,39	57,98	+0,59
6.18.12.10,6	9.18.28,82	28,34	−0,48	73.39. 6,09	6,98	+0,89
7.18. 8.34,2	9.18.48,42	48,04	−0,38	73.40.22,74	23,90	+1,16

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″
March 26 . 13 . 51 . 32,4	14 . 10 . 2,83	2,98	+ 0,15	100 . 15 . 4,15	23,12	+ 18,97
30 . 13 . 34 . 50,5	14 . 9 . 4,37	4,40	+ 0,03	100 . 9 . 24,86	43,52	+ 18,66
31 . 13 . 30 . 39,5	14 . 8 . 49,24	49,23	− 0,03	100 . 7 . 56,85	76,42	+ 19,57
April 2 . 13 . 22 . 16,7	14 . 8 . 18,21	18,34	+ 0,13	100 . 5 . 0,16	20,02	+ 19,86
4 . 13 . 13 . 53,8	14 . 7 . 46,99	46,76	− 0,23	100 . 2 . 0,64	20,82	+ 20,18
7 . 13 . 1 . 17,6	14 . 6 . 58,38	58,25	− 0,13	99 . 57 . 28,92	48,32	+ 19,40
11 . 12 . 44 . 27,4	14 . 5 . 51,67	51,72	+ 0,05	99 . 51 . 20,81	39,13	+ 18,32
13 . 12 . 36 . 1,9	14 . 5 . 17,86	17,81	− 0,05	99 . 48 . 12,63	32,63	+ 20,00
15 . 12 . 27 . 36,1	14 . 4 . 43,75	43,58	− 0,17	99 . 45 . 5,82	25,33	+ 19,51
22 . 11 . 58 . 3,6	14 . 2 . 42,31	42,39	+ 0,08	99 . 34 . 11,66	31,53	+ 19,87
26 . 11 . 41 . 10,9				99 . 28 . 3,84	23,72	+ 19,88
27 . 11 . 36 . 57,9	14 . 1 . 15,91	15,81	− 0,10	99 . 26 . 33,33	52,82	+ 19,49
29 . 11 . 28 . 31,7	14 . 0 . 41,46	41,45	− 0,01	99 . 23 . 32,92	52,52	+ 19,60
30 . 11 . 24 . 18,8	14 . 0 . 24,41	24,36	− 0,05	99 . 22 . 3,64	23,33	+ 19,69
May 2 . 11 . 15 . 53,2	13 . 59 . 50,55	50,43	− 0,12	99 . 19 . 8,94	27,12	+ 18,18
6 . 10 . 59 . 3,2	13 . 58 . 44,03	43,73	− 0,30	99 . 13 . 24,49	44,82	+ 20,33
9 . 10 . 46 . 26,7	13 . 57 . 55,10	54,96	− 0,14	99 . 9 . 17,84	37,52	+ 19,68
10 . 10 . 42 . 14,9	13 . 57 . 39,12	39,00	− 0,12	99 . 7 . 56,07	77,02	+ 20,95
11 . 10 . 38 . 3,2	13 . 57 . 23,31	23,18	− 0,13	99 . 6 . 39,81	57,62	+ 17,81
12 . 10 . 33 . 51,6	13 . 57 . 7,63	7,52	− 0,11	99 . 5 . 20,61	39,42	+ 18,81
13 . 10 . 29 . 40,1	13 . 56 . 51,99	52,03	+ 0,04	99 . 4 . 2,78	22,52	+ 19,74
14 . 10 . 25 . 29,1	13 . 56 . 36,77	36,73	− 0,04	99 . 2 . 47,48	66,92	+ 19,44
16 . 10 . 17 . 7,6	13 . 56 . 7,03	6,71	− 0,32	99 . 0 . 19,07	39,52	+ 20,45
17 . 10 . 12 . 56,8	13 . 55 . 52,15	52,00	− 0,15	98 . 59 . 8,06	27,82	+ 19,76
18 . 10 . 8 . 46,6	13 . 55 . 37,77	37,51	− 0,26	98 . 57 . 56,46	77,62	+ 21,16
19 . 10 . 4 . 36,1	13 . 55 . 23,21	23,23	+ 0,02	98 . 56 . 47,95	68,82	+ 20,87
21 . 9 . 56 . 16,7	13 . 54 . 55,50	55,38	− 0,12	98 . 54 . 34,98	55,52	+ 20,54
26 . 9 . 35 . 31,9	13 . 53 . 50,08	49,96	− 0,12	98 . 49 . 28,82	50,22	+ 21,40
27 . 9 . 31 . 23,7	13 . 53 . 37,76	37,65	− 0,11	98 . 48 . 33,62	54,02	+ 20,40
30 . 9 . 19 . 0,7	13 . 53 . 2,46	2,40	− 0,06	98 . 45 . 56,51	75,81	+ 19,30
31 . 9 . 14 . 53,9	13 . 52 . 51,48	51,22	− 0,26	98 . 45 . 7,23	26,61	+ 19,38
June 4 . 8 . 58 . 28,5	13 . 52 . 9,63	9,45	− 0,18	98 . 42 . 8,46	28,31	+ 19,85
11 . 8 . 29 . 56,1	13 . 51 . 8,49	8,35	− 0,14	98 . 38 . 11,75	29,51	+ 17,76
13 . 8 . 21 . 50,0	13 . 50 . 54,16	53,89	− 0,27	98 . 37 . 19,71	39,31	+ 19,60
14 . 8 . 17 . 47,1	13 . 50 . 47,16	47,18	+ 0,02	98 . 36 . 58,63	77,31	+ 18,68
15 . 8 . 13 . 45,0	13 . 50 . 40,89	40,81	− 0,08	98 . 36 . 38,23	57,41	+ 19,18
16 . 8 . 9 . 43,0	13 . 50 . 34,85	34,79	− 0,06	98 . 36 . 20,99	39,60	+ 18,61
18 . 8 . 1 . 40,3	13 . 50 . 23,92	23,80	− 0,12	98 . 35 . 52,10	70,20	+ 18,10
20 . 7 . 53 . 38,9	13 . 50 . 14,29	14,22	− 0,07	98 . 35 . 31,18	49,10	+ 17,92
24 . 7 . 37 . 40,0	13 . 49 . 59,05*	59,42	+ 0,37			
25 . 7 . 33 . 41,9	13 . 49 . 56,79	56,63	− 0,16	98 . 35 . 13,83	33,20	+ 19,37
July 6 . 6 . 50 . 20,3	13 . 49 . 50,24	50,15	− 0,09			

* An imperfect observation. See the note to this Transit.

Greenwich Mean Solar Time of Transit.	Apparent R.A.	Seconds of Tabular R.A.	Errors of Tables.	Apparent N.P.D. of Center.	Seconds of Tabular N.P.D.	Errors of Tables.
d. h. m. s.	h. m. s.	s.	s.	° ′ ″	″	″
July 20 . 14 . 28 . 13,7	22 . 24 . 10,70	14,29	+ 3,59			
27 . 13 . 59 . 52,4	22 . 23 . 20,65	24,18	+ 3,53	100 . 55 . 35,64	26,99	− 8,65
30 . 13 . 47 . 41,5	22 . 22 . 57,46	61,15	+ 3,69	100 . 57 . 52,75	43,59	− 9,16
Aug. 1 . 13 . 39 . 33,8	22 . 22 . 41,50	45,31	+ 3,81	100 . 59 . 24,72	16,79	− 7,93
3 . 13 . 31 . 26,0	22 . 22 . 25,43	29,11	+ 3,68	101 . 0 . 61,49	51,79	− 9,70
5 . 13 . 23 . 17,6	22 . 22 . 8,84	12,61	+ 3,77	101 . 2 . 38,46	28,39	− 10,07
6 . 13 . 19 . 13,4	22 . 22 . 0,47	4,26	+ 3,79	101 . 3 . 25,76	17,19	− 8,57
8 . 13 . 11 . 4,5	22 . 21 . 43,38	47,34	+ 3,96	101 . 4 . 64,25	55,79	− 8,46
9 . 13 . 6 . 59,9	22 . 21 . 34,65	38,78	+ 4,13	101 . 5 . 54,62	45,59	− 9,03
12 . 12 . 54 . 46,5	22 . 21 . 8,97	12,73	+ 3,76	101 . 8 . 26,23	16,79	− 9,44
13 . 12 . 50 . 41,8	22 . 21 . 0,16	3,94	+ 3,78	101 . 9 . 18,41	7,69	− 10,72
15 12 . 42 . 32,4	22 . 20 . 42,51	46,24	+ 3,73	101 . 10 . 59,76	49,99	− 9,77
19 . 12 . 26 . 13,0	22 . 20 . 6,66	10,38	+ 3,72	101 . 14 . 25,41	16,19	− 9,22
24 . 12 . 5 . 48,5	22 . 19 . 21,52	25,14	+ 3,62	101 . 18 . 44,63	34,79	− 9,84
31 . 11 . 37 . 13,7	22 . 18 . 17,99	21,62	+ 3,63	101 . 24 . 43,91	34,79	− 9,12
Sept. 2 . 11 . 29 . 3,8	22 . 17 . 59,77	63,62	+ 3,85	101 . 26 . 24,88	16,29	− 8,59
5 . 11 . 16 . 49,4	22 . 17 . 33,04	36,86	+ 3,82	101 . 28 . 55,53	46,99	− 8,54
6 . 11 . 12 . 44,7	22 . 17 . 24,30	28,00	+ 3,70	101 . 29 . 45,08	36,59	− 8,49
9 . 11 . 0 . 30,8	22 . 16 . 58,02	61,69	+ 3,67	101 . 32 . 10,89	3,49	− 7,40
10 . 10 . 56 . 26,1	22 . 16 . 49,24	53,02	+ 3,78	101 . 32 . 59,92	51,69	− 8,23
13 . 10 . 44 . 12,9	22 . 16 . 23,68	27,37	+ 3,69	101 . 35 . 22,61	13,99	− 8,62
14 . 10 . 40 . 8,7	22 . 16 . 15,31	18,96	+ 3,65	101 . 36 . 9,34	0,59	− 8,75
23 . 10 . 3 . 33,7	22 . 15 . 3,35	7,06	+ 3,71	101 . 42 . 43,49	35,49	− 8,00
24 . 9 . 59 . 30,5	22 . 14 . 56,00	59,53	+ 3,53	101 . 43 . 24,83	16,39	− 8,44
28 . 9 . 43 . 18,1	22 . 14 . 27,13	30,53	+ 3,40	101 . 45 . 61,84	53,59	− 8,25
30 . 9 . 35 . 12,8	22 . 14 . 13,58	16,75	+ 3,17	101 . 47 . 16,56	7,99	− 8,57
Oct. 1 . 9 . 31 . 9,8				101 . 47 . 50,15	44,09	− 6,06
3 . 9 . 23 . 5,0	22 . 13 . 53,51	56,99	+ 3,48			
4 . 9 . 19 . 2,8	22 . 13 . 47,16	50,66	+ 3,50	101 . 49 . 35,46	27,69	− 7,77
5 . 9 . 15 . 0,4	22 . 13 . 40,72	44,47	+ 3,75	101 . 50 . 10,48	0,69	− 9,79
11 . 8 . 50 . 51,3	22 . 13 . 6,88	10,32	+ 3,44	101 . 53 . 10,31	0,69	− 9,62
13 . 8 . 42 . 49,4	22 . 12 . 56,83	60,16	+ 3,33	101 . 53 . 62,84	53,69	− 9,15
15 . 8 . 34 . 48,0	22 . 12 . 47,19	50,64	+ 3,45	101 . 54 . 52,02	42,79	− 9,23
18 . 8 . 22 . 47,2	22 . 12 . 34,06	37,59	+ 3,53	101 . 55 . 56,68	49,49	− 7,19
21 . 8 . 10 . 47,9	22 . 12 . 22,49	26,04	+ 3,55	101 . 56 . 56,32	47,40	− 8,92
27 . 7 . 46 . 54,3	22 . 12 . 4,23	7,69	+ 3,46			
28 . 7 . 42 . 55,9	22 . 12 . 1,80	5,27	+ 3,47	101 . 58 . 34,54	27,40	− 7,14
29 . 7 . 38 . 57,6	22 . 11 . 59,37	63,02	+ 3,65	101 . 58 . 44,96	37,60	− 7,36
31 . 7 . 31 . 2,0	22 . 11 . 55,57	59,10	+ 3,53	101 . 58 . 63,62	54,80	− 8,82
Nov. 3 . 7 . 19 . 10,0	22 . 11 . 51,31	54,60	+ 3,29	101 . 59 . 21,12	13,00	− 8,12
5 . 7 . 11 . 15,9	22 . 11 . 49,04	52,54	+ 3,50			
7 . 7 . 3 . 23,0	22 . 11 . 47,89	51,25	+ 3,36	101 . 59 . 29,67	22,00	− 7,67
8 . 6 . 59 . 26,6	22 . 11 . 47,47	50,90	+ 3,43	101 . 59 . 28,48	21,50	− 6,98
14 . 6 . 35 . 53,2	22 . 11 . 49,48	52,91	+ 3,43	101 . 58 . 64,46	55,70	− 8,76
17 . 6 . 24 . 12,5				101 . 58 . 35,55	28,00	− 7,55
18 . 6 . 20 . 14,9	22 . 11 . 54,87	58,15	+ 3,28			
23 . 6 . 0 . 46,1	22 . 12 . 5,64	9,06	+ 3,42	101 . 57 . 12,14	3,60	− 8,54
24 . 5 . 56 . 53,1	22 . 12 . 8,58	11,83	+ 3,25	101 . 56 . 53,52	45,81	− 7,71
Dec. 1 . 5 . 29 . 46,2	22 . 12 . 33,13	36,56	+ 3,43	101 . 54 . 18,23	11,11	− 7,12
6 . 5 . 10 . 29,8	22 . 12 . 56,38	59,83	+ 3,45	101 . 51 . 58,02	49,41	− 8,61
8 . 5 . 2 . 48,7	22 . 13 . 7,08	10,44	+ 3,36	101 . 50 . 55,20	45,51	− 9,69
9 . 4 . 58 . 58,3	22 . 13 . 12,63	16,03	+ 3,40	101 . 50 . 18,58	12,01	− 6,57
13 . 4 . 43 . 38,6	22 . 13 . 36,66	40,15	+ 3,49	101 . 47 . 55,13	48,21	− 6,92
16 . 4 . 32 . 10,8	22 . 13 . 56,66	60,03	+ 3,37	101 . 45 . 59,32	50,41	− 8,91
23 . 4 . 5 . 31,5	22 . 14 . 48,91	52,22	+ 3,31	101 . 40 . 51,18	43,21	− 7,97

COMPARISONS OF CLOCKS

AND

CHRONOMETERS.

1836.

(THE letter *H* is used as an abbreviation for Hardy, the Transit Clock: *G* for Graham, the Clock in the Dome, commonly used with the Equatoreal: *U* is a Sidereal Chronometer, beating half-seconds.)

Day of Comparison.	Clock.	Clock Time.	Chron.	Chronometer Time.
		h. m. s.		h. m. s.
April 15	G.	12.27.16	U.	12.31.29,4
	G.	12.27.50	U.	12.32. 3,4
	H.	12.37. 0	U.	12.41.40,0
	H.	12.37.45	U.	12.42.25,0
April 25	H.	10.32.25	U.	10.33.34,9
	H.	10.33.19	U.	10.34.28,9
	G.	10.35.22	U.	10.36.10,8
	G.	10.36.51	U.	10.37.39,8
	G.	11.24.51	U.	11.25.40,0
	G.	11.25.19	U.	11.26. 8,0
	H.	11.31.59	U.	11.33. 9,0
	H.	11.32.59	U.	11.34. 9,0
May 11	H.	14.54.44	U.	14.57.57,0
	H.	14.55.26	U.	14.58.39,0
	G.	14.57. 6	U.	15. 0. 4,5
	G.	14.57.33	U.	15. 0.31,4
May 13	H.	14.12.54	U.	14.16.25,0
	H.	14.13.29	U.	14.17. 0,0
	G.	14.15. 8	U.	14.18.31,2
	G.	14.15.37	U.	14.19. 0,3
May 14	H.	13.47.44	U.	13.51.25,2
	H.	13.48.22	U.	13.52. 3,2
	G.	13.49.42	U.	13.53.20,0
	G.	13.50.14	U.	13.53.52,0
May 15	H.	5.30.35	U.	5.34.22,5
	H.	5.31.10	U.	5.34.57,3
	H.	7.56. 0	U.	7.59.47,7
May 15	H.	7.56.40	U.	8. 0.27,7
	H.	8.16. 0	U.	8.19.47,4
	H.	8.16.33	U.	8.20.20,4
	G.	8.17.45	U.	8.21.33,0
	G.	8.18. 5	U.	8.21.53,0
May 18	H.	13.46. 7	U.	13.50.32,5
	H.	13.46.35	U.	13.51. 0,5
	G.	14.10.48	U.	14.15. 3,1
	G.	14.11.31	U.	14.15.46,1
July 23	G.	17.13. 7	U,	17.17.30,4
	G.	17.13.30	U.	17.17.53,5
	H.	17.20. 5	U.	17.22.15,3
	H.	17.20.37	U.	17.22.47,3
Oct. 27	G.	0.40. 7	U.	0.43. 6,3
	G.	0.40.36	U.	0.43.35,3
	H.	0.42.19	U.	0.45. 3,0
	H.	0.42.47	U.	0.45.31,0
Dec. 24	G.	5. 6.11	U.	5. 2.53,5
	G.	5. 7. 5	U.	5. 3.47,5
	H.	5. 7.16	U.	5. 9. 3,0
	H.	5. 7.33	U.	5. 9.20,0
	G.	5.52.49	U.	5.49.31,6
	G.	5.53.20	U.	5.50. 2,7
	H.	5.53.47	U.	5.55.34,4
	H.	5.54.15	U.	5.56. 2,4

OBSERVATIONS

OF THE

SOLAR ECLIPSE

OF

May 15, 1836,

WITH THE EQUATOREAL AND THE CLOCK GRAHAM.

OBSERVATIONS OF THE SOLAR ECLIPSE OF MAY 15, 1836.

THE Eclipse was observed with the Equatoreal and the Clock Graham. The graduated face of the Declination Circle was West. From comparisons of Graham and Hardy on May 13 and 14, and on May 15 immediately after the Eclipse, by the intervention of Chronometer *U*, (as given under the head of 'Comparisons of Clocks and Chronometers') it appears that the losing rate of *G* on *H* may be taken on the 15th at $4^s,9$. At the same time the losing rate of *H* was $1^s,8$. Hence the absolute losing rate of *G* was $6^s,7$.

The loss of *H* at the 0^h preceding the Eclipse was $34^s,92$. By calculating the loss of *G* at 0^h from that of *H*, by means of the comparison May 15 and with the losing rate $6^s,7$, it is found to be $33^s,82$.

These values are used in deducing the Apparent Sidereal time from the time by Graham, in the following Tables.

The Micrometers are called Upper (*U*) and Lower (*L*). The upper is that which has the micrometer-head upwards when the graduated face is West. The objects are described as North (*N*) and South (*S*), as they appear in the heavens, and the North Cusp is always that which has greater Declination North than the other. With one exception the Micrometer measurements were all taken at the middle wire: those included within the same lines were taken with the instrument in the same position.

MICROMETER MEASUREMENTS OF DIFFERENCE OF N.P.D. AND TIMES OF OBSERVATION.

SERIES I. (Observed by *C.*)

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	*h. m. s.*	*h m. s.*			*r.*
1	5 . 25 . 24 5 . 25 . 31	5 . 25 . 59,34 5 . 26 . 6,34	1 . 52 . 19,36 1 . 52 . 26,34	N. Cusp S. Cusp	L. U.	1,500 6,725
2	5 . 27 . 15 5 . 27 . 24	5 . 27 . 50,35 5 . 27 . 59,35	1 . 54 . 10,07 1 . 54 . 19,05	N. Cusp S. Cusp	L. U.	4,724 9,190
3	5 . 29 . 4 5 . 29 . 15	5 . 29 . 39,36 5 . 29 . 50,36	1 . 55 . 58,78 1 . 56 . 9,75	N. Cusp S. Cusp	L. U.	6,740 10,800
4	5 . 30 . 36 5 . 30 . 50	5 . 31 . 11,36 5 . 31 . 25,36	1 . 57 . 30,53 1 . 57 . 44,49	N. Cusp S. Cusp	L. U.	8,160 11,668
5	5 . 32 . 16 5 . 32 . 31	5 . 32 . 51,37 5 . 33 . 6,37	1 . 59 . 10,27 1 . 59 . 25,23	N. Cusp S. Cusp	L. U.	9,588 12,546
6	5 . 33 . 31 5 . 33 . 46,5	5 . 34 . 6,38 5 . 34 . 21,88	2 . 0 . 25,08 2 . 0 . 40,54	N. Cusp S. Cusp	L. U.	10,495 13,320
7	5 . 34 . 41 5 . 34 . 58	5 . 35 . 16,38 5 . 35 . 33,38	2 . 1 . 34,89 2 . 1 . 51,84	N. Cusp S. Cusp	L. U.	11,244 13,825
8	5 . 36 . 3 5 . 36 . 20	5 . 36 . 38,39 5 . 36 . 55,39	2 . 2 . 56,68 2 . 3 . 13,63	N. Cusp S. Cusp	L. U.	12,140 14,408
9	5 . 38 . 49 5 . 39 . 8	5 . 39 . 24,40 5 . 39 . 43,40	2 . 5 . 42,23 2 . 6 . 1,18	N. Cusp S. Cusp	L. U.	12,847 16,235
10	5 . 40 . 23,5 5 . 40 . 43,5	5 . 40 . 58,91 5 . 41 . 18,91	2 . 7 . 16,48 2 . 7 . 36,43	N. Cusp S. Cusp	L. U.	13,726 16,706
11	5 . 41 . 48* 5 . 42 . 7,5	5 . 42 . 23,42 5 . 42 . 42,92	2 . 8 . 40,77 2 . 9 . 0,21	N. Cusp S. Cusp	L. U.	14,580 17,355
12	5 . 43 . 14,5 5 . 43 . 35	5 . 43 . 49,92 5 . 44 . 10,42	2 . 10 . 7,03 2 . 10 . 27,46	N. Cusp S. Cusp	L. U.	15,376 17,606
13	5 . 47 . 17 5 . 47 . 39*	5 . 47 . 52,44 5 . 48 . 14,44	2 . 14 . 8,88 2 . 14 . 30,82	N. Cusp S. Cusp	L. U.	17,445 18,522
14	5 . 49 . 5 5 . 49 . 27	5 . 49 . 40,45 5 . 50 . 2,45	2 . 15 . 56,59 2 . 16 . 18,53	N. Cusp S. Cusp	L. U.	18,209 19,029
15	5 . 50 . 42 5 . 51 . 4	5 . 51 . 17,46 5 . 51 . 39,46	2 . 17 . 33,33 2 . 17 . 55,27	N. Cusp S. Cusp	L. U.	18,957 19,059
16	5 . 53 . 10 5 . 53 . 32*	5 . 53 . 45,47 5 . 54 . 7,47	2 . 20 . 0,95 2 . 20 . 22,88	N. Cusp S. Cusp	L. U.	20,020 19,646
17	5 . 55 . 12 5 . 55 . 34	5 . 55 . 47,48 5 . 56 . 9,48	2 . 22 . 2,62 2 . 22 . 24,57	N. Cusp S. Cusp	L. U.	20,856 19,910
18	5 . 56 . 35,5 5 . 56 . 57	5 . 57 . 10,98 5 . 57 . 32,49	2 . 23 . 25,89 2 . 23 . 47,34	N. Cusp S. Cusp	L. U.	21,447 19,990

* These times were marked ‘doubtful’.

SERIES II. (Observed by *G.*)

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	h. m. s.	h. m. s.			r.
1	6 . 1 . 15 6 . 2 . 5	6 . 1 . 50,51 6 . 2 . 40,51	2 . 28 . 4,66 2 . 28 . 54,52	N. Cusp ⊙ N.L.	U. L.	5,430 5,102
2	6 . 2 . 56 6 . 3 . 45,5	6 . 3 . 31,51 6 . 4 . 21,02	2 . 29 . 45,39 2 . 30 . 34,75	N. Cusp ⊙ N.L.	U. L.	4,900 5,039
3	6 . 4 . 54 6 . 5 . 43	6 . 5 . 29,52 6 . 6 . 18,53	2 . 31 . 43,07 2 . 32 . 31,95	N. Cusp ⊙ N.L.	U. L.	4,209 4,990
4	6 . 6 . 10 6 . 6 . 57	6 . 6 . 45,53 6 . 7 . 32,53	2 . 32 . 58,88 2 . 33 . 45,74	N. Cusp ⊙ N.L.	U. L.	3,990 5,062
5	6 . 7 . 37 6 . 8 . 22,5	6 . 8 . 12,54 6 . 8 . 58,04	2 . 34 . 25,65 2 . 35 . 11,02	N. Cusp ⊙ N.L.	U. L.	3,063 4,963

SERIES III. (Observed by *C.*)

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	h. m. s.	h. m. s.			r.
1	6 . 12 . 43 6 . 13 . 6	6 . 13 . 18,56 6 . 13 . 41,56	2 . 39 . 30,83 2 . 39 . 53,77	S. Cusp ⊙ S.L.	L. U.	0,679 1,553
2	6 . 15 . 51 6 . 16 . 24	6 . 16 . 26,57 6 . 16 . 59,58	2 . 42 . 38,33 2 . 43 . 11,25	S. Cusp ⊙ S L.	L. U.	0,650 1,319
3	6 . 18 . 23 6 . 18 . 45	6 . 18 . 58,59 6 . 19 . 20,59	2 . 45 . 9,93 2 . 45 . 31,88	S. Cusp ⊙ S.L.	L. U.	0,651 1,327
4	6 . 19 . 46 6 . 20 . 7	6 . 20 . 21,59 6 . 20 . 42,59	2 . 46 . 32,70 2 . 46 . 53,65	S. Cusp ⊙ S.L.	L. U.	0,606 1,231
5	6 . 21 . 14 6 . 21 . 35	6 . 21 . 49,60 6 . 22 . 10,60	2 . 48 . 0,48 2 . 48 . 21,42	S. Cusp ⊙ S.L.	L. U.	0,514 1,314
6	6 . 23 . 58 6 . 24 . 20	6 . 24 . 33,61 6 . 24 . 55,61	2 . 50 . 44,04 2 . 51 . 5,98	S. Cusp ⊙ S.L.	L. U.	0,626 1,250
7	6 . 25 . 19 6 . 25 . 39	6 . 25 . 54,62 6 . 26 . 14,62	2 . 52 . 4,82 2 . 52 . 24,77	S. Cusp ⊙ S.L.	L. U.	0,588 1,271
8	6 . 26 . 35 6 . 26 . 55	6 . 27 . 10,62 6 . 27 . 30,63	2 . 53 . 20,62 2 . 53 . 40,58	S. Cusp ⊙ S.L.	L. U.	0,692 1,248
9	6 . 27 . 53,5 6 . 28 . 15	6 . 28 . 29,13 6 . 28 . 50,63	2 . 54 . 38,91 2 . 55 . 0,35	S. Cusp ⊙ S.L.	L. U.	0,773 1,151
10	6 . 29 . 31,3 6 . 29 . 55	6 . 30 . 6,94 6 . 30 . 30,64	2 . 56 . 16,46 2 . 56 . 40,10	S. Cusp ⊙ S.L.	L. U.	0,876 1,121
11	6 . 30 . 52 6 . 31 . 12	6 . 31 . 27,64 6 . 31 . 47,64	2 . 57 . 36,94 2 . 57 . 56,88	S. Cusp ⊙ S.L.	L. U.	0,991 0,989

COINCIDENCE OF MOON'S S.L. WITH S. CUSP.

Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.
h. m. s.	h. m. s.	h. m. s.
6 . 35 . 45	6 . 36 . 20,67	3 . 2 . 29,17

SERIES IV. (Observed by *C.*)

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	h. m. s.	h. m. s.			r.
1	6 . 37 . 1 6 . 37 . 26	6 . 37 . 36,67 6 . 38 . 1,67	3 . 3 . 44,96 3 . 4 . 9,89	☽ S.L. ⊙ S.L.	L. U.	2,230 0,872
2	6 . 39 . 25,5	6 . 40 . 1,18	3 . 6 . 9,08	☽ S.L. ⊙ S.L.	L. U.	2,720 0,870
3	6 . 40 . 43	6 . 41 . 18,69	3 . 7 . 26,37	☽ S.L. ⊙ S.L.	L. U.	2,906 0,910
4	6 . 42 . 2	6 . 42 . 37,70	3 . 8 . 45,17	☽ S.L. ⊙ S.L.	L. U.	3,354 0,810

SERIES V. (Observed by *C.*)

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	h. m. s.	h. m. s.			r.
1	6 . 49 . 3 6 . 50 . 48	6 . 49 . 38,73 6 . 51 . 23,74	3 . 15 . 45,05 3 . 17 . 29,77	S. Cusp N. Cusp	U. L.	16,602 15,254
2	6 . 51 . 52 6 . 54 . 22	6 . 52 . 27,74 6 . 54 . 57,76	3 . 18 . 33,60 3 . 21 . 3,20	S. Cusp N. Cusp	U. L.	5,869 4,708*
3	6 . 56 . 15 6 . 58 . 31	6 . 56 . 50,77 6 . 59 . 6,78	3 . 22 . 55,91 3 . 25 . 11,54	N. Cusp S. Cusp	U. U.	2,750† 17,840†
4	7 . 1 . 46 7 . 3 . 30,5	7 . 2 . 21,79 7 . 4 . 6,30	3 . 28 . 26,02 3 . 30 . 10,24	N. Cusp S. Cusp	L. U.	15,928 16,190
5	7 . 5 . 5 7 . 6 . 38	7 . 5 . 40,81 7 . 7 . 13,81	3 . 31 . 44,50 3 . 33 . 17,24	N. Cusp S. Cusp	L. U.	19,045 18,671

* Taken at the 5th wire. The change of position of the cusps was very rapid.

† The cusps here change their relative positions in declination. The upper Micrometer wire pursued the S. cusp to the opposite side of the fixed wire, and the reading put down was − 7,750. The upper Micrometer wire being then brought back and put on the S. cusp, the reading was 7,840. Both readings have been increased 10 revolutions.

SERIES VI. (Observed by *G.*)*

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	h. m. s.	h. m. s.			r.
1	7.11.11	7.11.46,83	3.37.49,52	☉ S.L. ☽ S.L.	U. L.	6,065 4,228
2	7.11.54	7.12.29,84	3.38.32,41	☉ S.L. ☽ S.L.	U. L.	6,063 4,414
3	7.12.26	7.13. 1,84	3.39. 4,33	☉ S.L. ☽ S.L.	U. L.	6,100 4,594
4	7.12.58	7.13.33,84	3.39.36,24	☉ S.L. ☽ S.L.	U. L.	6,060 4,709
5	7.13.28	7.14. 3,85	3.40. 6,17	☉ S.L. ☽ S.L.	U. L.	6,074 4,800
6	7.13.58	7.14.33,85	3.40.36,09	☉ S.L. ☽ S.L.	U. L.	6,058 4,923
7	7.14.26	7.15. 1,85	3.41. 4,01	☉ S.L. ☽ S.L.	U. L.	6,058 5,010
8	7.15.18	7.15.53,85	3.41.55,87	☉ S.L. ☽ S.L.	U. L.	6,034 5,170
9	7.15.55	7.16.30,86	3.42.32,78	☉ S.L. ☽ S.L.	U. L.	6,030 5,373
10	7.16.30	7.17. 5,86	3.43. 7,69	☉ S.L. ☽ S.L.	U. L.	6,002 5,469
11	7.16.58	7.17.33,86	3.43.35,61	☉ S.L. ☽ S.L.	U. L.	5,975 5,675
12	7.17.38	7.18.13,86	3.44.15,49	☉ S.L. ☽ S.L.	U. L.	5,973 5,764
13	7.18.20	7.18.55,87	3.44.57,39	☉ S.L. ☽ S.L.	U. L.	5,954 5,912
14	7.19.15	7.19 50,87	3.45.52,24	☉ S.L. ☽ S.L.	U. L.	5,886 6,170
15	7.19.47	7.20.22,88	3.46.24,16	☉ S.L. ☽ S.L.	U. L.	5,884 6,286
16	7.20.52	7.21.27,88	3.47.28,99	☉ S.L. ☽ S.L.	U. L.	5,878 6,580
17	7.21.46	7.22.21,88	3.48.22,84	☉ S.L. ☽ S.L.	U. L.	5,870 6,748
18	7.22.22	7.22.57,89	3.48.58,75	☉ S.L. ☽ S.L.	U. L.	5,858 6,890
19	7.22.54	7.23.29,89	3.49.30,66	☉ S.L. ☽ S.L.	U. L.	5,832 7,048

* Before this series the eye-glass was changed to a power of 70, that before used being 100.

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	h. m. s.	h. m. s.			r.
20	7.23.35	7.24.10,89	3.50.11,55	⊙ S.L. ☽ S.L.	U. L.	5,783 7,208
21	7.24.13	7.24.48,90	3.50.49,46	⊙ S.L. ☽ S.L.	U. L.	5,775 7,363
22	7.24 46	7.25.21,90	3.51.22,36	⊙ S.L. ☽ S.L.	U. L.	5,765 7,468
23	7.25.25	7.26. 0,90	3.52. 1,26	⊙ S.L. ☽ S.L.	U. L.	5,738 7,600
24	7.26.44	7.27.19,91	3.53.20,06	⊙ S.L. ☽ S.L.	U. L.	5,700 7,973
25	7.27.13	7.27.48,91	3.53.48,98	⊙ S.L. ☽ S.L.	U. L.	5,693 8,110

SERIES VII. (Observed by *G.*)

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	h. m. s.	h. m. s.			r.
1	7.44.15,5 7.44.59,5	7.44.51,49 7.45.35,49	4.10.48,76 4.11.32,64	N. Cusp S. Cusp	L. U.	19,150 18,527
2	7.45.45 7.46.28	7.46.21,00 7.47. 4,00	4.12.18,02 4.13. 0,91	N. Cusp S. Cusp	L. U.	18,993 17,947
3	7.47.15 7.47.56	7.47.51,00 7.48.32,01	4.13.47,78 4.14.28,68	N. Cusp S. Cusp	L. U.	18,747 17,382
4	7.48.51 7.49.31	7.49.27,01 7.50. 7,01	4.15.23,53 4.16. 3,42	N. Cusp S. Cusp	L. U.	18,375 16,807
5	7.49.58 7.50.37	7.50.34,02 7.51.13,02	4.16.30,36 4.17. 9,24	N. Cusp S. Cusp	L. U.	18,222 16,329
6	7.51. 5 7.51.53	7.51.41,02 7.52.29,02	4.17.37,17 4.18.25,04	N. Cusp S. Cusp	L. U.	18,033 15,813
7*	7.55.23 7.55.55,5	7.55.49,01 7.56.31,54	4.21.54,49 4.22.26,91	N. Cusp S. Cusp	L. U.	17,053 14,991
8*	7.58.52,5 7.59.22	7.59.28,56 7.59.58,06	4.25.23,43 4.25.52,85	N. Cusp S. Cusp	L. U.	15,718 12,230
9*	8. 0.59 8. 1.26	8. 1.35,07 8. 2. 2,07	4.27.29,60 4.27.56,52	N. Cusp S. Cusp	L. U.	15,103 10,701
10	8. 2.50 8. 3.14	8. 3.26,08 8. 3.50,08	4.29.20,31 4.29.44,24	N. Cusp S. Cusp	L. U.	14,482 9,175

* Observed by *C.*

Number of the Series.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Object.	Microm.	Micrometer Reading.
	h. m. s.	h. m. s.	h. m. s.			r.
11	8. 3.37	8. 4.13,08	4.30. 7,17	N. Cusp	L.	14,043
	8. 4. 0	8. 4.36,08	4.30.30,11	S. Cusp	U.	8,583
12	8. 4.27	8. 5. 3,08	4.30.57,04	N. Cusp	L.	13,664
	8. 4.49	8. 5.25,09	4.31.18,99	S. Cusp	U.	7,949
13	8. 5.22	8. 5.58,09	4.31.51,90	N. Cusp	L.	13,110
	8. 5.43	8. 6.19,09	4.32.12,85	S. Cusp	U.	7,170
14	8. 6. 7,5	8. 6.43,59	4.32.37,28	N. Cusp	L.	12,653
	8. 6.27	8. 7. 3,09	4.32.56,72	S. Cusp	U.	6,434
15	8. 7.16	8. 7.52,10	4.33.45,60	N. Cusp	L.	11,922
	8. 7.34	8. 8.10,10	4.34. 3,55	S. Cusp	U.	5,346
16	8. 7.56	8. 8.32,10	4.34.25,49	N. Cusp	L.	11,340
	8. 8.24	8. 9. 0,10	4.34.53,42	S. Cusp	U.	4,428
17	8. 8.56	8. 9.32,10	4.35.25,33	N. Cusp	L.	10,445
	8. 9. 9,5	8. 9.45,61	4.35.38,81	S. Cusp	U.	3,525
18	8. 9.57	8.10.33,11	4.36.26,17	N. Cusp	L.	9,180
	8.10. 8	8.10.44,11	4.36.37,14	S. Cusp	U.	2,144

DIFFERENCES *of* NORTH POLAR DISTANCES, *Calculated from the preceding Observations, and Corrected for Refraction.*

(Mean value of Micrometer Revolution = 33″,400. Coincidence of Upper Micrometer Wire (graduation West) with Fixed Wire, 0^{r},022, and that of Lower Micrometer Wire with Fixed Wire, -0^{r},040. Barometer, 30^{in},536; Thermometers, free and attached, 67°,5.)

	Greenwich Mean Solar Time. h. m. s.		Greenwich Mean Solar Time. h. m. s.		′ ″	Hour Angle. h. m.
The N.P.D. of N. Cusp at	1.52.19,4	was less than that of S. Cusp at	1.52.26,3	by	4.35,45	1.56,6
....	1.54.10,1	....	1.54.19,1	...	7.45,54	1.58,5
....	1.55.58,8	....	1.56. 9,8	...	9.46,69	2. 0,3
....	1.57.30,5	....	1.57.44,5	...	11. 3,14	2. 1,9
....	1.59.10,3	....	1.59.25,2	...	12.20,20	2. 3,6
....	2. 0.25,1	....	2. 0.40,5	...	13.16,37	2. 4,8
....	2. 1.34,9	....	2. 1.51,8	...	13.58,28	2. 6,0
....	2. 2.56,7	....	2. 3.13,6	...	14.47,70	2. 7,4
....	2. 5.42,2	....	2. 6. 1,2	...	16.12,38	2.10,2
....	2. 7.16,5	....	2. 7.36,4	...	16.57,50	2.11,7
....	2. 8.40,8	....	2. 9. 0,2	...	17.47,72	2.13,1
....	2.10. 7,0	....	2.10.27,5	...	18.22,70	2.14,6
....	2.14. 8,9	....	2.14.30,8	...	20. 2,46	2.18,7
....	2.15.56,6	....	2.16.18,5	...	20.44,93	2.20,5
....	2.17.33,3	....	2.17.55,3	...	21.10,92	2.22,1
....	2.20. 1,0	....	2.20.22,9	...	22. 6,06	2.24,5
....	2.22. 2,6	....	2.22.24,6	...	22.42,82	2.26,6
....	2.23.25,9	....	2.23.47,3	...	23. 5,26	2.28,0
The N.P.D. of N. Cusp at	2.28. 4,7	was greater than that of ⊙'s N.L. at	2.28.54,5	by	5.52,55	2.32,9
....	2.29.45,4	....	2.30.34,8	...	5.32,72	2.34,5
....	2.31.43,1	....	2.32.32,0	...	5. 8,00	2.36,5
....	2.32.58,9	....	2.33.45,7	...	5. 3,08	2.37,7
....	2.34.25,7	....	2.34.11,0	...	4.28,79	2.39,2
The N.P.D. of S. Cusp at	2.39.30,8	was less than that of ⊙'s S.L. at	2.39.53,8	by	1.15,20	2.44,1
....	2.42.38,3	....	2.43.11,3	...	1. 6,40	2.47,3
....	2.45. 9,9	....	2.45.31,9	...	1. 6,71	2.49,8
....	2.46.32,7	....	2.46.53,7	...	1. 2,00	2.51,1
....	2.48. 0,5	....	2.48.21,4	...	1. 1,68	2.52,6
....	2.50.44,0	....	2.51. 6,0	...	1. 3,29	2.55,3
....	2.52. 4,8	....	2.52.24,8	...	1. 2,72	2.56,7
....	2.53.20,6	....	2.53.40,6	...	1. 5,43	2.57,9
....	2.54.38,9	....	2.55. 0,4	...	1. 4,89	2.59,3
....	2.56.16,5	....	2.56.40,1	...	1. 7,33	3. 0,9
....	2.57.36,9	....	2.57.56,9	...	1. 6,76	3. 6,9

The S. Cusp coincided with ☽'s S.L. at 3^{h}. 2^{m}. 29^{s},2 Greenwich Mean Solar Time.

	Greenwich Mean Solar Time. h. m. s.		Greenwich Mean Solar Time. h. m. s.		′ ″	Hour Angle. h. m.
The N.P.D. of ☽'s S.L. at	3. 3.45,0	was less than that of ⊙'s S.L. at	3. 4. 9,9	by	1.44,26	3. 8,4
....	3. 6. 9,1	....	3. 6. 9,1	...	2. 0,56	3.10,6
....	3. 7.26,4	....	3. 7.26,4	...	2. 8,12	3.11,9
....	3. 8.45,2	....	3. 8.45,2	...	2.19,77	3.13,2
The N.P.D. of S. Cusp at	3.15.45,1	was greater than that of N. Cusp at	3.17.29,8	by	17.42,31	3.21,1
....	3.18.33,6	....	3.21. 3,2	...	5.54,08	3.24,3
The N.P.D. of N. Cusp at	3.22.55,9	was less than that of S. Cusp at	3.25.11,5	...	8.24,30	3.28,6
....	3.28.26,0	....	3.30.10,2	...	17.53,97	3.33,8
....	3.31.44,5	....	3.33.17,2	...	21. 1,06	3.37,1

	Greenwich Mean Solar Time.				Hour Angle.
	h. m. s.		′ ″		h. m.
The N.P.D. of ☉'s S.L. was greater than that of ☽'s S.L. at	3 . 37 . 49,5	by	5 . 44,59		3 . 42,4
	3 . 38 . 32,4	...	5 . 50,74		3 . 43,1
	3 . 39 . 4,3	...	5 . 58,00		3 . 43,6
	3 . 39 . 36,2	...	6 . 0,51		3 . 44,2
	3 . 40 . 6,2	...	6 . 4,03		3 . 44,7
	3 . 40 . 36,1	...	6 . 7,60		3 . 45,2
	3 . 41 . 4,0	...	6 . 10,51		3 . 45,6
	3 . 41 . 55,9	...	6 . 15,05		3 . 46,5
	3 . 42 . 32,8	...	6 . 21,70		3 . 47,1
	3 . 43 . 7,7	...	6 . 23,98		3 . 47,7
	3 . 43 . 35,6	...	6 . 28,95		3 . 48,2
	3 . 44 . 15,5	...	6 . 32,88		3 . 48,8
	3 . 44 . 57,4	...	6 . 37,18		3 . 49,5
	3 . 45 . 52,2	...	6 . 43,53		3 . 50,4
	3 . 46 . 24,2	...	6 . 47,34		3 . 51,0
	3 . 47 . 29,0	...	6 . 56,97		3 . 52,1
	3 . 48 . 22,8	...	7 . 2,31		3 . 53,0
	3 . 48 . 58,8	...	7 . 6,66		3 . 53,6
	3 . 49 . 30,7	...	7 . 11,07		3 . 54,1
	3 . 50 . 11,6	...	7 . 14,78		3 . 54,8
	3 . 50 . 49,5	...	7 . 19,71		3 . 55,4
	3 . 51 . 22,4	...	7 . 22,88		3 . 56,0
	3 . 52 . 1,3	...	7 . 26,39		3 . 56,6
	3 . 53 . 20,1	...	7 . 37,58		3 . 57,9
	3 . 53 . 49,0	...	7 . 41,93		3 . 58,4

	Greenwich Mean Solar Time.		Greenwich Mean Solar Time.			Hour Angle.
	h. m. s.		h. m. s.		′ ″	h. m.
The N.P.D. of N. Cusp at	4 . 10 . 48,8	was less than that of S. Cusp at	4 . 11 . 32,6	by	20 . 59,96	4 . 15,8
	4 . 12 . 18,0		4 . 13 . 0,9	...	20 . 35,34	4 . 17,3
	4 . 13 . 47,8		4 . 14 . 28,7	...	20 . 8,23	4 . 18,8
	4 . 15 . 23,5		4 . 16 . 3,4	...	19 . 36,59	4 . 20,4
	4 . 16 . 30,4		4 . 17 . 9,2	...	19 . 15,51	4 . 21,5
	4 . 17 . 37,2		4 . 18 . 25,0	...	18 . 51,95	4 . 22,7
	4 . 21 . 54,5		4 . 22 . 26,9	...	17 . 51,75	4 . 26,8
	4 . 25 . 23,4		4 . 25 . 52,9	...	15 . 34,84	4 . 30,3
	4 . 27 . 29,6		4 . 27 . 56,5	...	14 . 23,19	4 . 32,4
	4 . 29 . 20,3		4 . 29 . 44,2	...	13 . 11,44	4 . 34,2
	4 . 30 . 7,2		4 . 30 . 50,1	...	12 . 36,96	4 . 35,0
	4 . 30 . 57,0		4 . 31 . 19,0	...	12 . 2,43	4 . 35,8
	4 . 31 . 51,9		4 . 32 . 12,9	...	11 . 18,55	4 . 36,7
	4 . 32 . 37,3		4 . 32 . 56,7	...	10 . 38,68	4 . 37,5
	4 . 33 . 45,6		4 . 34 . 3,6	...	9 . 37,88	4 . 38,6
	4 . 34 . 25,5		4 . 34 . 53,4	...	8 . 47,74	4 . 39,4
	4 . 35 . 25,3		4 . 35 . 38,8	...	7 . 47,63	4 . 40,2
	4 . 36 . 26,2		4 . 36 . 37,1	...	6 . 19,17	4 . 41,2

Observations *of the beginning and end of the* Eclipse, *and of the Bisection of two of the Solar Spots by the Moon's Limbs.*

I observed the beginning of the Eclipse with the Telescope of the Equatoreal. Power about 100. Also the time of passage of the Moon's 2 L. across the middle of the largest Spot then on the Sun's disc.

	h.	m.	s.
Time of beginning of the Eclipse (by Graham)	5	24	16
Apparent Sidereal Time	5	24	51,33
Greenwich Mean Solar Time	1	51	11,54

This time was noted at the first indication of the proximity of the Moon by an irregular indentation and waving of the Sun's Limb, and probably anticipates the real commencement.

	h.	m.	s.
Bisection of Spot (by Graham)	7	28	30
Apparent Sidereal Time	7	29	5,91
Greenwich Mean Solar Time	3	55	5,77

The bisection was not watched for but seen accidentally: the observation probably is not very good.

Mr Airy (the present Astronomer Royal) observed the beginning and end of the Eclipse and the bisection of a Spot by the Moon's 1 L, with the 46-inch Dollond. Power perhaps 120. The time by Chronometer *U*.

	h.	m.	s.
Beginning of the Eclipse (by *U*)	5	28	10
Apparent Sidereal Time	5	24	57,93
Greenwich Mean Solar Time	1	51	18,12

This is apparently very accurate.

	h.	m.	s.
Bisection of Spot (by *U*)	5	44	8
Apparent Sidereal Time	5	40	55,85
Greenwich Mean Solar Time	2	7	13,43

This Spot was the next inferior in size to the largest and situated near the Sun's Limb.

	h.	m.	s.
End of the Eclipse (by *U*)	8	15	50,5
Apparent Sidereal Time	8	12	38,34
Greenwich Mean Solar Time	4	38	31,06

Mr John Glaisher observed the end of the Eclipse with the Equatoreal Telescope. Power about 70.

	h.	m.	s.
Time of ending (by Graham)	8	12	4
Apparent Sidereal Time	8	12	40,12
Greenwich Mean Solar Time	4	38	32,83

THE following Observations were made on May 15 (Civil Time), before and after the Eclipse, and on May 16, to serve for determining at any time during the Eclipse the positions of the two largest Spots with respect to the Sun's Center.

The larger Spot for distinction will be called (*c*) and the smaller (*b*)*.

Micrometer Measurements, and Calculation of Differences of North Polar Distances of the two Spots and the Sun's N. Limb.

(Graduation of Declination Circle West.)

Object.	Time by Graham.	Apparent Sidereal Time.	Greenwich Mean Solar Time.	Micrometer	Micrometer Reading.	Hour Angle.	Difference of N.P.D.
	h. m. s.	*h. m. s.*	*d. h. m. s.*		*r.*	*h. m.*	′ ″
⊙'s N.L. N. point of (*c*) ⊙'s N.L. N. point of (*c*)	2.15. 0†	2.15.34,5	14.22.42.25,7	U. U.	Fixed Wire 15,139 Fixed Wire 15,075	1.13,8	8.26,58 8.22,99
⊙'s N.L. N. point of (*c*)	2.55. 0	2.55.34,6	14.23.22.19,3	L.	15,120 Fixed Wire	0.33,8	8.25,51
N. point of (*b*) ⊙'s N.L.	3. 9. 0	3. 9.34,7	14.23.36.17,1	U. L.	9,271 15,836	0.19,8	13.58,48
N. point of (*b*) ⊙'s N.L.	3.13. 0	3.13.34,7	14.23.40.16,4	U. L.	9,271 15,995	0.15,8	14. 3,79
S. point of (*b*) ⊙'s N.L.	3.30. 0	3.30.34,8	14.23.57.13,7	U. L.	9,271 16,310	0. 1,2	14.14,31
S. point of (*b*) ⊙'s N.L.	3.35. 0	3.35.34,8	15. 0. 2.12,9	U. L.	9,326 16,405	0. 6,2	14.19,31
⊙'s N.L. S. point of (*c*)	3.37. 0	3.37.34,8	15. 0. 4.12,6	L.	15,639 Fixed Wire	0. 8,2	8.42,84
⊙'s N.L. N. point of (*c*)	5.58. 0	5.58.42,2	16. 2.21. 1,0	U.	Fixed Wire 17,391	2.25,0	9.40,36
⊙'s N.L. N. point of (*c*)	6. 2.15	6. 2.57,2	16. 2.25.15,3	L. U.	12,259 5,110	2.29,3	9.42,00
⊙'s N.L. N. point of (*c*)	6. 5.55	6. 6.37,2	16. 2.28.54,7	L. U.	12,311 5,070	2.32,9	9.42,40
⊙'s N.L. N. point of (*b*)	6.24.10	6.24.52,3	16. 2.47. 6,8	L. U.	14,418 12,150	2.51,2	14.49,41
⊙'s N.L. N. point of (*b*)	6.26.35	6.27.17,3	16. 2.49.31,4	L. U.	14,511 12,061	2.53,6	14.49,55
⊙'s N.L. N. point of (*b*)	6.29.15	6.29.57,3	16. 2.52.10,9	L. U.	14,570 12,003	2.56,3	14.49,58

† This, which was the only time noted, may apply without sensible error to both measurements.

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* Being so called in a communication I received of observations made at York and Durham of the times of Transit of the Moon's Limbs over these Spots.

THE preceding Differences of N.P.D. have been corrected for refraction in the same manner as those of the Eclipse, the states of the Barometer and Thermometer being considered the same on the 16th as on the 15th, which may be done without sensible error, as the correction is in every instance exceedingly small. The coincidence of the Upper Micrometer Wire with the Fixed Wire before the Eclipse was 0^{r},022, and after the Eclipse 0^{r},023. The coincidence of the Lower Micrometer Wire before the Eclipse was – 0^{r},009, and after the Eclipse – 0^{r},071. The value of a Micrometer Revolution is always taken at 33″,400.

Differences of Times of Transit of the Centers of the Spots and of the Sun's 1 *L.*

Object.	Times of Transit (by Graham).					Mean of Times.	Greenwich Mean Solar Time.	Mean Diff. of Transits.
	h. m. s.	*m. s.*	*m. s.*	*m. s.*	*m. s.*	*h. m. s.*	*d. h. m. s.*	*s.*
⊙'s 1 L. Center of (*c*)	2 . 26 . 48,5 2 . 27 . 46,0	26 . 59,4 27 . 56,5	27 . 11,0 28 . 8,4			2 . 28 . 28,3	14 . 22 . 55 . 51,8	57,4
⊙'s 1 L. Center of (*c*)	2 . 29 . 46,8 2 . 30 . 44,0	29 . 58,0 30 . 55,0	30 . 8,6 31 . 6,0	30 . 19,8 31 . 17,0	30 . 31,0 31 . 28,0	2 . 30 . 37,4	14 . 22 . 58 . 0,6	57,2
⊙'s 1 L. *Center of (*c*)	2 . 59 . 44,0 2 . 60 . 41,0	59 . 55,2 60 . 52,0	60 . 6,0 61 . 3,0	60 . 17,0 61 . 14,2		3 . 1 . 29,1	14 . 23 . 28 . 47,4	57,0
⊙'s 1 L. Center of (*b*)	3 . 18 . 0,2 3 . 18 . 17,6†		20 . 39,7 20 . 57,0		21 . 13,7 21 . 31,0	3 . 20 . 6,5	14 . 23 . 47 . 21,8	17,3
⊙'s 1 L. Center of (*b*)	3 . 22 . 19,8 3 . 22 . 37,2		23 . 33,4 23 . 51,0		24 . 47,7 25 . 5,5	3 . 23 . 42,4	14 . 23 . 50 . 57,1	17,6
⊙'s 1 L. Center of (*b*)	8 . 39 . 9,3 8 . 39 . 25,0		39 . 31,4 39 . 47,4		39 . 54,2 40 . 9,7	8 . 39 . 39,5	15 . 5 . 6 . 3,9	15,7
⊙'s 1 L. Center of (*b*)	8 . 40 . 11,7 8 . 40 . 27,0		40 . 33,8 40 . 50,0		40 . 56,0 41 . 11,4	8 . 40 . 41,7	15 . 5 . 7 . 6,0	15,6
⊙'s 1 L. Center of (*c*)	8 . 42 . 10,8 8 . 43 . 4,8	42 . 21,9 43 . 16,0	42 . 33,0 43 . 27,0	42 . 44,2 43 . 37,8	42 . 55,3 43 . 49,7	8 . 43 . 0,0	15 . 5 . 9 . 23,9	54,1
⊙'s 1 L. Center of (*c*)	8 . 44 . 28,4 8 . 45 . 22,3	44 . 39,8 45 . 33,4	44 . 50,8 45 . 44,9	45 . 1,9 45 . 55,7	45 . 13,0 46 . 7,0	8 . 45 . 17,8	15 . 5 . 11 . 41,3	53,9
⊙'s 1 L. Center of (*c*)	6 . 12 . 47,6 6 . 13 . 30,6		12 . 58,8 13 . 42,0		13 . 10,0 13 . 53,0	6 . 13 . 20,4	16 . 2 . 36 . 18,9	43,1
⊙'s 1 L. Center of (*c*)	6 . 18 . 7,3 6 . 18 . 50,0		18 . 18,4 19 . 1,3		18 . 29,6 19 . 12,9	6 . 18 . 39,9	16 . 2 . 41 . 37,6	43,0
⊙'s 1 L. Center of (*c*)	6 . 20 . 43,0 6 . 21 . 26,0		20 . 54,2 21 . 37,4		21 . 5,5 21 . 48,5	6 . 21 . 15,8	16 . 2 . 44 . 13,0	43,1
⊙'s 1 L. Center of (*b*)	6 . 37 . 54,0 6 . 38 . 2,0		38 . 16,5 38 . 24,6		38 . 39,0 38 . 47,0	6 . 38 . 20,5	16 . 3 . 1 . 15,0	8,0
⊙'s 1 L. Center of (*b*)	6 . 40 . 46,5 6 . 40 . 54,1		41 . 8,7 41 . 16,2		41 . 31,0 41 . 39,0	6 . 41 . 12,6	16 . 3 . 4 . 6,7	7,7
⊙'s 1 L. Center of (*b*)	6 . 43‡ . 4,3 6 . 43‡ . 12,7		43 . 26,8 43 . 35,0		43 . 49,0 43 . 57,0	6 . 43 . 30,8	16 . 3 . 6 . 24,5	8,2

* The seconds have been diminished by 1^{s} in this observation.
† Written down 18,6.
‡ These minutes were not written down, and are supplied conjecturally.

IN all the above Observations, the Times of Transit noted are those of the North Points of the Spots, which from the form of the Spots were nearly the Times of Transit of their Centers. The Transits included in the same space were observed at the same wire: when the times are in adjacent spaces, the observations were made at consecutive wires. It has not been thought worth while to apply any correction for refraction, as it was found by calculation that the greatest amount of correction would not exceed $0^{s},03$.

The following are the Mean Results of the above Observations.

$$\text{Difference of N.P.D. of } \odot\text{'s N.L. and center of } (c) \left\{ \begin{array}{lrrrrl r} & \text{d.} & \text{h.} & \text{m.} & \text{s.} & & {}' \quad {}'' \\ \text{at} & 14. & 23. & 2. & 22,5 & \text{G.M.S.T.}\ldots & 8.33,44 \\ \ldots & 16. & 2. & 25. & 3,6 & \ldots\ldots\ldots & 9.50,25 \end{array} \right.$$

Hence, change of N.P.D. of (*c*) relative to ⊙'s Center in one hour of Mean Solar Time $= 2'',806$.

$$\text{Difference of N.P.D. of } \odot\text{'s N.L. and Center of } (b) \left\{ \begin{array}{lrrrrl r} & \text{d.} & \text{h.} & \text{m.} & \text{s.} & & {}' \quad {}'' \\ \text{at} & 14. & 23. & 38. & 16,8 & \text{G.M.S.T.}\ldots & 14.\ 8,98 \\ \ldots & 16. & 2. & 49. & 36,4 & \ldots\ldots\ldots & 14.57,27 \end{array} \right.$$

Hence, change of N.P.D. of (*b*) relative to ⊙'s Center in one hour of Mean Solar Time $= 1'',776$.

$$\text{Difference of AR.* of } \odot\text{'s 1 L. and Center of } (c) \left\{ \begin{array}{lrrrrl r} & \text{d.} & \text{h.} & \text{m.} & \text{s.} & & \text{s.} \\ \text{at} & 14. & 23. & 7. & 33,3 & \text{G.M.S.T.}\ldots & 57,04 \\ \ldots & 15. & 5. & 10. & 32,6 & \ldots\ldots\ldots & 53,85 \\ \ldots & 16. & 2. & 40. & 43,1 & \ldots\ldots\ldots & 42,95 \end{array} \right.$$

The mean of the two first results gives the difference of AR. of ⊙'s 1 L. and Center of (*c*) at $15^{d}.\ 2^{h}.\ 9^{m}.\ 2^{s},9$ G.M.S.T. equal to $55^{s},45$; and this compared with the result of the observations on the 16th, gives $0^{s},510$ for the variation of the AR. of (*c*) relative to ⊙'s Center in one hour of Mean Solar Time.

$$\text{Difference of AR. of } \odot\text{'s N.L. and Center of } (b) \left\{ \begin{array}{lrrrrl r} & \text{d.} & \text{h.} & \text{m.} & \text{s.} & & \text{s.} \\ \text{at} & 14. & 23. & 49. & 9,5 & \text{G.M.S.T.}\ldots & 17,40 \\ \ldots & 15. & 5. & 6. & 35,0 & \ldots\ldots\ldots & 15,61 \\ \ldots & 16. & 3. & 3. & 55,4 & \ldots\ldots\ldots & 7,95 \end{array} \right.$$

From the mean of the two first results, the difference of AR. of ⊙'s 1 L. and Center of (*b*) at $15^{d}.\ 2^{h}.\ 27^{m}.\ 52^{s},3$ G.M.S.T. is equal to $16^{s},51$; and this difference compared with that on the 16th gives $0^{s},348$ for the variation of AR. of (*b*) relative to ⊙'s Center in one hour of Mean Solar Time.

By the Nautical Almanac, the AR. of ⊙'s Center at any time t (expressed in Mean Solar Hours) from Greenwich Mean Noon of May 15 is .... $3^{h}.29^{m}.1^{s},93 + 9^{s},88t + 0^{s},001t^{2}$

Declination at same time.................................$18^{\circ}.56'.35'',9 + 35'',20t - 0'',033t^{2}$

Semidiameter .... $15'.49'',9 - 0'',01t$

Difference of AR. of Center and Limb............... $1^{m}.6^{s},96 + 0^{s},003t$.

By the preceding results, the difference between the AR. of Center of (*c*) and that of ⊙'s 1 L. at the time t is.. $56^{s},55 - 0^{s},510t$

The difference of the AR. of (*b*) and of ⊙'s 1 L. at the same time is... $17^{s},37 - 0^{s},348t$

The difference of N.P.D. of Center of (*c*) and ⊙'s N.L. at the time t... $8'.36'',13 + 2'',806t$

Difference of N.P.D. of Center of (*b*) and ⊙'s N.L. at same time......... $14'.9'',62 + 1'',776t$.

Hence finally,

AR. of Center of (*c*) at the time $t = 3^{h}.28^{m}.51^{s},52 + 9^{s},367t + 0^{s},001t^{2}$

Declination of Center of (*c*)......... $= 19^{\circ}.3'.49'',67 + 32'',384t - 0'',033t^{2}$

AR. of Center of (*b*) at the time $t = 3^{h}.28^{m}.12^{s},34 + 9^{s},529t + 0^{s},001t^{2}$

Declination of Center of (*b*)........ $= 18^{\circ}.58'.16'',18 + 33'',414t - 0'',033t^{2}$.

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* The differences of Times of Transit are corrected for the Sun's Motion in R.A.

ECLIPSES

OF

JUPITER'S SATELLITES,

AND

OCCULTATIONS OF STARS BY THE MOON.

1836.

April 15. 11^{h}. I observed the emersion of Jupiter's 1st Satellite with the Equatoreal Telescope and Clock Graham. The observation was satisfactory.

Mr Glaisher observed the same with the 46-inch Dollond and Chronometer *U*. All circumstances favorable.

Time noted.	Time by Hardy.	Apparent Sidereal Time.	Greenwich Mean Solar Time.
h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*
12 . 23 . 12,0 Graham.	12 . 22 . 45,4	12 . 23 . 34,95	10 . 46 . 43,8
12 . 27 . 30,0 Chron. *U.*	12 . 22 . 50,0	12 . 23 . 39,55	10 . 46 . 48,4

April 25. 8^{h}. Mr Glaisher observed the occultation of η Leonis by the Moon's dark Limb, with the Equatoreal and Clock Graham. Very satisfactory observation.

Time noted.	Time by Hardy.	Apparent Sidereal Time.	Greenwich Mean Solar Time.
h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*
10 . 13 . 12,9	10 . 12 . 51,8	10 . 13 . 56,34	7 . 58 . 7,4

I observed the reappearance of the same Star with the same instruments. The time noted is probably several seconds too late, as the Star emerged where it was not expected.

Time noted.	Time by Hardy.	Apparent Sidereal Time.	Greenwich Mean Solar Time.
h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*
11 . 16 . 40	11 . 16 . 19,0	11 . 17 . 23,60	9 . 1 . 24,2

May 18. 10^{h}. The emersion of Jupiter's 4th Satellite was observed by Mr Glaisher with the Equatoreal Telescope and Clock Graham. Jupiter was too near the horizon to admit of a good observation, and the time in the Nautical Almanac was earlier by 5^{m}, which occasioned the observer's eye to be tired.

Time noted.	Time by Hardy.	Apparent Sidereal Time.	Greenwich Mean Solar Time.
h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*
13 . 42 . 4	13 . 41 . 53,6	13 . 42 . 35,00	9 . 55 . 45,9

July 23. 9^{h}. The disappearance of δ Scorpii at the Moon's dark Limb, and the reappearance of the same Star at the bright Limb were observed by myself with the Equatoreal Telescope and Clock Graham: and Mr Glaisher observed the reappearance with the 46-inch Dollond and the Transit Clock. To both observers the Star, on reappearing, seemed to hang

a few seconds on the Moon's Limb, presenting the appearance of an irregularity of the Limb. The observations on the whole were satisfactory.

	Time noted.	Time by Hardy.	Apparent Sidereal Time.	Greenwich Mean Solar Time.
	h. m. s.	h. m. s.	h. m. s.	h. m. s.
Disappearance...	17 . 4 . 45,4 Graham.	17 . 6 . 58,6	17 . 7 . 18,02	9 . 0 . 25,2
Reappearance ...	18 . 2 . 44,0 Graham.	18 . 4 . 57,2*	18 . 5 . 16,67	9 . 58 . 14,4
Reappearance ...	18 . 4 . 59,6 Hardy.		18 . 5 . 19,07	9 . 58 . 16,8

Oct. 27. 10h. Mr Glaisher observed the disappearance of *k* Tauri at the Moon's bright Limb and reappearance at the dark Limb with the Equatoreal Telescope and Clock Graham. The first observation not very good; the Moon's light was dazzling. The other pretty good and circumstances favorable.

	Time noted.	Time by Hardy.	Apparent Sidereal Time.	Greenwich Mean Solar Time.
	h. m. s.	h. m. s.	h. m. s.	h. m. s.
Disappearance...	0 . 2 . 25,6	0 . 2 . 40,9	0 . 3 . 37,99	9 . 38 . 9,7
Reappearance....	1 . 0 . 39,0	1 . 0 . 54,3	1 . 1 . 51,43	10 . 36 . 13,6

Dec. 24. $10\frac{1}{2}^h$–$11\frac{1}{2}^h$. I observed as follows with the Equatoreal Telescope and Clock Graham.

1°. The disappearance of Jupiter's 1st Satellite. The observation unsatisfactory, as the disappearance was so gradual it was impossible to mark the exact time when the Satellite went out of sight.

2°. The disappearance of ω^1 Cancri at the Moon's bright Limb. The occultation probably took place a second or two later than the time noted. The Star was seen with great difficulty as it approached the bright edge of the Moon, and the wind was so loud that the Assistant was obliged to call out the seconds.

3°. The reappearance of the same Star at the Moon's dark Limb. This observation very doubtful, as the Star appeared earlier than was expected, and the seconds were not counted at the time. It was considered not worth reducing.

	Time noted.	Time by Hardy.	Apparent Sidereal Time.	Greenwich Mean Solar Time.
	h. m. s.	h. m. s.	h. m. s.	h. m. s.
First Observation...	4 . 53 . 35,0	4 . 48 . 30,5	4 . 49 . 23,07	10 . 35 . 5,1
Second.................	5 . 4 . 23,0	4 . 59 . 18,5	5 . 0 . 11,08	10 . 45 . 51,4
Third..................	5 . 47 . 40,0	5 . 42 . 35,5	5 . 43 . 28,11	11 . 29 . 1,3

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* The same comparison is used for this time as for the preceding.

CALCULATION OF THE OCCULTATIONS.

Disappearance of η Leonis.

1836. April $25^{d} . 7^{h} . 58^{m} . 7^{s},4 + t^{s}$ Greenwich Mean Solar Time.

From the Nautical Almanac:

Moon's Right Ascension in arc .... $149^{\circ} . 22' . 25'',05 + x'' + 0'',5182 \times t$

Moon's N.P.D. .... $71^{\circ} . 56' . 22'',15 + y'' + 0'',1859 \times t$

Moon's Horizontal Equatoreal Parallax .... $56' . 2'',07 \times \left(1 + \frac{m}{1000}\right)$

Moon's Semidiameter .... $15' . 16'',17 \times \left(1 + \frac{n}{1000}\right)$

Star's Right Ascension in arc .... $149 . 35 . 56,55 + e''$

Star's N.P.D. .... $72 . 26 . 23,30 + f.$

Results of Calculation:

Geocentric R.A. of corresponding point, in arc $149^{\circ} . 38' . 23'',71 + e'' + 0'',1472 \times m$

Geocentric N.P.D. of corresponding point ...... $71 . 54 . 43,17 + f - 1,9001 \times m$

Geocentric distance of Moon's center from corresponding point, or

Moon's Semidiameter .... $= 15' . 16'',71 + 0'',9452 \times \{e - x - 0,5182 \times t + 0,1472 \times m\}$

$- 0,1073 \times \{f - 1,9001 \times m\}$

$+ 0,1087 \times \{y + 0,1859 \times t\}.$

Final Equation:

$$-0,54 = +0,9452 \times e - 0,1073 \times f - 0,9452 \times x + 0,1087 \times y - 0,4696 \times t + 0,3430 \times m - 0,9162 \times n.$$

Reappearance of η Leonis.

1836. April $25^{d}.9^{h}.1^{m}.24^{s},2+t^{s}$ Greenwich Mean Solar Time.

From the Nautical Almanac:

	° ′ ″ ″ ″
Moon's Right Ascension in arc..................	$149.55.11{,}55+x+0{,}5175\times t$
Moon's N.P.D.	$72.\ 8.\ 8{,}02+y+0{,}1875\times t$
Moon's Horizontal Equatoreal Parallax.........	$56.\ 4{,}11\times\left(1+\frac{m}{1000}\right)$
Moon's Semidiameter..............................	$15.16{,}72\times\left(1+\frac{n}{1000}\right)$
Star's Right Ascension in arc	$149.35.56{,}55+e''$
Star's N.P.D.	$72.26.23{,}30+f.$

Results of Calculation:

	° ′ ″ ″ ″
Geocentric R.A. of corresponding point, in arc	$149.48.10{,}81+e+0{,}7343\times m$
Geocentric N.P.D. of corresponding point......	$71.54.\ 7{,}17+f-1{,}9361\times m$

Geocentric distance of Moon's center from corresponding point, or

Moon's Semidiameter......$=15'.31'',23+0'',4087\times\{-e+x+0{,}5175\times t-0{,}7343\times m\}$

$$-0{,}9027\times\{f-1{,}9361\times m\}$$

$$+0{,}9029\times\{y+0{,}1875\times t\}.$$

Final Equation:

$$-14{,}51=-0{,}4087\times e-0{,}9027\times f+0{,}4087\times x+0{,}9029\times y+0{,}3808\times t-0{,}1253\times m-0{,}9167\times n.$$

Disappearance of δ Scorpii.

1836. July $23^{d}.9^{h}.0^{m}.25^{s},2+t^{s}$ Greenwich Mean Solar Time.

From the Nautical Almanac:

	° ′ ″ ″ ″
Moon's Right Ascension in arc..................	$237.36.28{,}50+x+0{,}6146\times t$
Moon's N.P.D.	$111.17.18{,}38+y+0{,}1777\times t$

Moon's Horizontal Equatoreal Parallax......... $59' . 41'',02 \times \left(1 + \frac{m}{1000}\right)$

Moon's Semidiameter.............................. $16 . 15,79 \times \left(1 + \frac{n}{1000}\right)$

Star's Right Ascension in arc .... $237^{\circ} . 40' . 10'',65 + e''$

Star's N.P.D. .... $112 . \ 9 . \ 2,70 + f.$

Results of Calculation:

Geocentric R.A. of corresponding point, in arc $237^{\circ} . 53' . \ 4'',49 + e'' + 0'',7738 \times m$

Geocentric N.P.D. of corresponding point...... $111 . 12 . 29,97 + f - 3,3927 \times m$

Geocentric distance of Moon's center from corresponding point, or

Moon's Semidiameter... $= 16' . 12'',05 + 0'',8900 \times \{+ e - x - 0,6146 \times t + 0,7738 \times m\}$

$- 0,2975 \times \{f - 3,3927 \times m\}$

$+ 0,2959 \times \{y + 0,1777 \times t\}.$

Final Equation:

$$+3,74 = +0,8900 \times e - 0,2975 \times f - 0,8900 \times x + 0,2959 \times y - 0,4944 \times t + 1,6980 \times m - 0,9758 \times n.$$

Reappearance of δ Scorpii.

1836. July $23^{d} . 9^{h} . 58^{m} . 14^{s},4 + t^{s}$ Greenwich Mean Solar Time.

From the Nautical Almanac:

Moon's Right Ascension in arc .... $238^{\circ} . 12' . \ 4'',35 + x'' + 0'',6168 \times t$

Moon's N.P.D. .... $111 . 27 . 31,55 + y + 0,1757 \times t$

Moon's Horizontal Equatoreal Parallax......... $59 . 42,70 \times \left(1 + \frac{m}{1000}\right)$

Moon's Semidiameter.............................. $16 . 16,24 \times \left(1 + \frac{n}{1000}\right)$

Star's Right Ascension in arc .... $237 . 40 . 10,65 + e''$

Star's N.P.D. .... $112 . \ 9 . \ 2,70 + f.$

Results of Calculation:

Geocentric R.A. of corresponding point, in arc	$238^\circ .\ 1' .\ 58'',27 + e'' + 1'',3076 \times m$
Geocentric N.P.D. of corresponding point......	$111^\circ .\ 14' .\ 0'',50 + f'' - 3'',3022 \times m$

Geocentric distance of Moon's center from corresponding point, or

Moon's Semidiameter.... $= 16' . 28'',16 + 0'',5321 \times \{-e + x + 0,6168 \times t - 1,3076 \times m\}$

$$- 0,8210 \times \{f - 3,3022 \times m\}$$

$$+ 0,8204 \times \{y + 0,1757 \times t\}.$$

Final Equation.

$$-11,92 = -0,5321 \times e - 0,8210 \times f + 0,5321 \times x + 0,8204 \times y + 0,4723 \times t + 2,0153 \times m - 0,9762 \times n$$

Disappearance of *k* Tauri.

1836. October $27^d . 9^h . 38^m . 9^s,7 + t^s$ Greenwich Mean Solar Time.

From the Nautical Almanac:

Moon's Right Ascension in arc	$71^\circ .\ 16' .\ 12'',45 + x'' + 0'',5474 \times t$
Moon's N.P.D.	$64^\circ .\ 48' .\ 51'',54 + y'' - 0'',1029 \times t$
Moon's Horizontal Equatoreal Parallax.........	$54' .\ 43'',74 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter.............................	$14' .\ 54'',79 \times \left(1 + \frac{n}{1000}\right)$
Star's Right Ascension in arc	$72^\circ .\ 2' .\ 28'',95 + e''$
Star's N.P.D.	$65^\circ .\ 12' .\ 24'',50 + f''$.

Results of Calculation:

Geocentric R.A. of corresponding point, in arc	$71^\circ .\ 27' .\ 17'',53 + e'' - 2'',1114 \times m$
Geocentric N.P.D. of corresponding point......	$64^\circ .\ 37' .\ 56'',93 + f'' - 2'',0676 \times m$

Geocentric distance of Moon's center from corresponding point, or

Moon's Semidiameter... $= 14' . 48'',93 + 0'',6118 \times \{+e - x - 0,5474 \times t - 2,1114 \times m\}$

$$- 0,7359 \times \{f - 2,0676 \times m\}$$

$$+ 0,7369 \times \{y - 0,1029 \times t\}.$$

Final Equation:

$$+5,86 = +0,6118 \times e - 0,7359 \times f - 0,6118 \times x + 0,7369 \times y - 0,4107 \times t + 0,2297 \times m - 0,8948 \times n.$$

Reappearance of *k* Tauri.

1836. October $27^{d} . 10^{h} . 35^{m} . 13^{s}{,}8 + t^{s}$ Greenwich Mean Solar Time.

From the Nautical Almanac:

	$^{\circ}\ \ ^{\prime}\ \ ^{\prime\prime}\ \ ^{\prime\prime}\ \ ^{\prime\prime}$
Moon's Right Ascension in arc	$71 . 47 . 26{,}85 + x + 0{,}5479 \times t$
Moon's N.P.D.	$64 . 42 . 59{,}97 + y - 0{,}1008 \times t$
Moon's Horizontal Equatoreal Parallax	$54 . 42{,}87 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter	$14 . 54{,}55 \times \left(1 + \frac{n}{1000}\right)$
Star's Right Ascension in arc	$72 . 2 . 28{,}95 + e''$
Star's N.P.D.	$65 . 12 . 24{,}50 + f.$

Results of Calculation:

	$^{\circ}\ \ ^{\prime}\ \ ^{\prime\prime}\ \ ^{\prime\prime}\ \ ^{\prime\prime}$
Geocentric R.A. of corresponding point, in arc	$71 . 31 . 22{,}65 + e - 1{,}8663 \times m$
Geocentric N.P.D. of corresponding point	$64 . 41 . 5{,}80 + f - 1{,}8787 \times m$

Geocentric distance of center from corresponding point, or

$$\begin{aligned}\text{Moon's Semidiameter} \ldots = 14' . 39'',17 &+ 0'',8966 \times \{- e + x + 0{,}5479 \times t + 1{,}8663 \times m\} \\ &- 0{,}1288 \times \{f - 1{,}8787 \times m\} \\ &+ 0{,}1308 \times \{y - 0{,}1008 \times t\}.\end{aligned}$$

Final Equation:

$$+ 15{,}38 = - 0{,}8966 \times e - 0{,}1288 \times f + 0{,}8966 \times x + 0{,}1308 \times y + 0{,}4781 \times t + 1{,}9153 \times m - 0{,}8946 \times n.$$

Disappearance of ω^{1} Cancri.

1836. December $24^{d} . 10^{h} . 45^{m} . 51^{s}{,}4 + t^{s}$ Greenwich Mean Solar Time.

From the Nautical Almanac:

	$^{\circ}\ \ ^{\prime}\ \ ^{\prime\prime}\ \ ^{\prime\prime}\ \ ^{\prime\prime}$
Moon's Right Ascension in arc	$117 . 11 . 9{,}15 + x + 0{,}5413 \times t$
Moon's N.P.D.	$63 . 54 . 17{,}01 + y + 0{,}0792 \times t$

Moon's Horizontal Equatoreal Parallax......... $53'.56'',68 \times \left(1+\frac{m}{1000}\right)$

Moon's Semidiameter............................ $14.41,99 \times \left(1+\frac{n}{1000}\right)$

Star's Right Ascension in arc .... $117.45.55,20 + e''$

Star's N.P.D. .... $64.\ 9.57,20 + f.$

Results of Calculation:

Geocentric R.A. of corresponding point, in arc $117^\circ.20'.51'',46 + e'' - 1'',5037 \times m$

Geocentric N.P.D. of corresponding point...... $63.42.23,92 + f - 1,6533 \times m$

Geocentric distance of Moon's center from corresponding point, or

Moon's Semidiameter....= $14'.44'',03 + 0'',5304 \times \{+e - x - 0,5413 \times t - 1,5037 \times m\}$

$- 0,8061 \times \{f - 1,6533 \times m\}$

$+ 0,8069 \times \{y + 0,0792 \times t\}.$

Final Equation:

$$-2,04 = +0,5304 \times e - 0,8061 \times f - 0,5304 \times x + 0,8069 \times y - 0,2232 \times t + 0,5351 \times m - 0,8820 \times n.$$

Disappearance of Center of Solar Spot (*b*).

1836. May $15^d.2^h.7^m.13^s,4 + t^s$ Greenwich Mean Solar Time.

From the Nautical Almanac:

Moon's Right Ascension in arc...................... $52^\circ.14'.11'',40 + x'' + 0'',5020 \times t$

Moon's N.P.D. .... $70.37.11,65 + y - 0,1675 \times t$

Moon's Horizontal Equatoreal Parallax........... $54.24,13 \times \left(1+\frac{m}{1000}\right)$

Moon's Semidiameter................................ $14.49,50 \times \left(1+\frac{n}{1000}\right)$

Sun's Right Ascension in arc .... $52.20.43,20 + e'' + 0'',0412 \times t$

Sun's N.P.D. .... $71.\ 2.\ 9,49 + f - 0,0098 \times t$

Sun's Horizontal Parallax.......................... $8,50 \times \left(1+\frac{m'}{1000}\right)$

Sun's Semidiameter................................. $15.49,88 \times \left(1+\frac{n'}{1000}\right).$

From Observations for determining the position of the Spot:

Right Ascension of center of Spot in arc	$52^\circ . 8' . 8'',25 + e'' + 0'',0412 \times t - 1'',0046 \times n'$
N.P.D. of center of Spot	$71 . 0 . 33,12 + f - 0,0098 \times t - 0,9498 \times n'$.

Results of Calculation:

Geocentric R.A. of corresponding point, in arc

$$52^\circ . 27' . 26'',29 + e'' + 0'',0412 \times t + 1'',1610 \times m - 0'',0030 \times m' - 1'',0046 \times n'$$

Geocentric N.P.D. of corresponding point

$$70^\circ . 29' . 17'',39 + f'' - 0'',0098 \times t - 1'',8806 \times m + 0'',0049 \times m' - 0'',9498 \times n'$$

Geocentric distance of Moon's center from corresponding point, or
Moon's Semidiameter

$$\begin{aligned} = 14'.46'',98 + 0'',7969 \times \{&+ e - x - 0,4608 \times t + 1,1610 \times m - 0,0030 \times m' - 1,0046 \times n'\} \\ &- 0,5342 \times \{f - 1,8806 \times m + 0,0049 \times m' - 0,0098 \times t - 0,9498 \times n'\} \\ &+ 0,5352 \times \{y - 0,1675 \times t\}. \end{aligned}$$

Final Equation:

$$+ 2,52 = + 0,7969 \times e - 0,5342 \times f - 0,7969 \times x + 0,5352 \times y - 0,4516 \times t + 1,9298 \times m - 0,0050 \times m' - 0,8895 \times n - 0,2932 \times n'.$$

Reappearance of center of Solar Spot (*c*).

1836. May $15^d . 3^h . 55^m . 5^s,8 + t^s$ Greenwich Mean Solar Time.

From the Nautical Almanac:

Moon's Right Ascension in arc	$53^\circ . 8' . 26'',10 + x'' + 0'',5037 \times t$
Moon's N.P.D.	$70 . 19 . 21,63 + y - 0,1639 \times t$
Moon's Horizontal Equatoreal Parallax.........	$54 . 22,91 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter............................	$14 . 49,16 \times \left(1 + \frac{n}{1000}\right)$

	° ′ ″ ″ ″
Sun's R.A. in arc	$52 . 50 . 9,60 + e + 0,0412 \times t$
Sun's N.P.D.	$71 . 1 . 6,35 + f - 0,0098 \times t$
Sun's Horizontal Parallax	$8,50 \times \left(1 + \frac{m'}{1000}\right)$
Sun's Semidiameter	$15 . 49,88 \times \left(1 + \frac{n'}{1000}\right).$

From observations for determining the position of the Spot:

	° ′ ″ ″ ″ ″
Right Ascension of center of Spot in arc	$52 . 22 . 3,60 + e + 0,0412 \times t - 1,0046 \times n'$
N.P.D. of center of Spot	$70 . 54 . 3,96 + f - 0,0098 \times t - 0,9498 \times n'.$

Results of Calculation:

Geocentric R.A. of corresponding point in arc

$$52^\circ . 52' . 39'',64 + e'' + 0'',0412 \times t + 1'',8408 \times m - 0'',0048 \times m' - 1'',0046 \times n'$$

Geocentric N.P.D. of corresponding point

$$70^\circ . 19' . 15'',15 + f'' - 2'',0943 \times m - 0'',0098 \times t + 0'',0055 \times m' - 0'',9498 \times n'.$$

Geocentric distance of Moon's center from corresponding point, or

Moon's Semidiameter $= 14' . 51'',13$

$$+ 0'',9417 \times \{- e + x + 0,4625 \times t - 1,8409 \times m + 0,0048 \times m' + 1,0046 \times n'\}$$
$$- 0,0065 \times \{f - 2,0943 \times m + 0,0055 \times m' - 0,0098 \times t - 0,9498 \times n'\}$$
$$+ 0,0081 \times \{y - 0,1639 \times t\}.$$

Final Equation:

$$- 1,97 = - 0,9417 \times e - 0,0065 \times f + 0,9417 \times x + 0,0081 \times y + 0,4343 \times t - 1,7200 \times m$$
$$+ 0,0045 \times m' - 0,8892 \times n + 0,9522 \times n'.$$

Commencement of the Solar Eclipse of May 15.

1836. May $15^d . 1^h . 51^m . 11^s,5 + t^s$ Greenwich Mean Solar Time.

From the Nautical Almanac:

	° ′ ″ ″ ″
Moon's Right Ascension in arc	$52 . 6 . 8,55 + x + 0,5020 \times t$
Moon's N.P.D.	$70 . 39 . 52,12 + y - 0,1668 \times t$

	$^\circ \quad ' \quad ''$
Moon's Horizontal Equatoreal Parallax........	$54 . 24,31 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter..............................	$14 . 49,55 \times \left(1 + \frac{n}{1000}\right)$
Sun's Right Ascension in arc......................	$52 . 20 . 3,60 + e + 0,0412 \times t$
Sun's N.P.D..	$71 . 2 . 18,89 + f - 0,0098 \times t$
Sun's Horizontal Parallax.........................	$8,50 \times \left(1 + \frac{m'}{1000}\right)$
Sun's Semidiameter................................	$15 . 49,89 \times \left(1 + \frac{n'}{1000}\right).$

Results of Calculation:

	$^\circ \quad ' \quad '' \quad '' \quad '' \quad ''$
Apparent R.A. of Moon's center in arc	$51 . 48 . 45,83 + x - 1,0427 \times m + 0,5020 \times t$
Apparent N.P.D. of Moon's center......	$71 . 10 . 57,57 + y + 1,8655 \times m - 0,1668 \times t$
Apparent R.A. of Sun's center in arc...	$52 . 20 . 0,90 + e - 0,0027 \times m' + 0,0412 \times t$
Apparent N.P.D. of Sun's center.......	$71 . 2 . 23,73 + f + 0,0048 \times m' - 0,0098 \times t$
Moon's Apparent Semidiameter.........	$15 . 0,43 \times \left(1 + \frac{n}{1000}\right).$

Apparent Distance of Centers of Sun and Moon, or Sum of Apparent Semidiameters

$$\begin{aligned} &= 30' . 47'',01 + 0'',9087 \times \{- x + e - 0,4608 \times t + 1,0427 \times m - 0,0027 \times m'\} \\ &\quad + 0,2796 \times \{y + 1,8655 \times m - 0,1668 \times t\} \\ &\quad - 0,2768 \times \{f + 0,0048 \times m' - 0,0098 \times t\}. \end{aligned}$$

Final Equation:

$$\begin{aligned} + 3,31 = &- 0,9087 \times x + 0,2796 \times y + 0,9087 \times e - 0,2768 \times f - 0,4626 \times t + 1,4691 \times m \\ &- 0,0038 \times m' - 0,9004 \times n - 0,9499 \times n'. \end{aligned}$$

End of the Solar Eclipse of May 15.

1836. May $15^d . 4^h . 38^m . 32^s,8 + t^s$ Greenwich Mean Solar Time.

From the Nautical Almanac:

	$^\circ \quad ' \quad '' \quad '' \quad ''$
Moon's Right Ascension in arc....................	$53 . 30 . 19,80 + x + 0,5045 \times t$
Moon's N.P.D.	$70 . 12 . 15,49 + y - 0,1624 \times t$

Moon's Horizontal Equatoreal Parallax	$54' . 22'',42 \times \left(1 + \frac{m}{1000}\right)$
Moon's Semidiameter	$14 . 49,02 \times \left(1 + \frac{n}{1000}\right)$
Sun's Right Ascension in arc	$52 . 26 . 57,00 + e'' + 0'',0412 \times t$
Sun's N.P.D.	$71 . \ 0 . 40,94 + f - 0,0098 \times t$
Sun's Horizontal Parallax	$8,50 \times \left(1 + \frac{m'}{1000}\right)$
Sun's Semidiameter	$15 . 49,86 \times \left(1 + \frac{n'}{1000}\right).$

Results of Calculation:

Apparent R.A. of Moon's center in arc	$52^\circ . 56' . 56'',60 + x - 2'',0032 \times m + 0'',5045 \times t$
Apparent N.P.D. of Moon's center ...	$70 . 48 . 53,29 + y + 2,1978 \times m - 0,1624 \times t$
Apparent R.A. of Sun's center in arc	$52 . 26 . 51,75 + e - 0,0052 \times m' + 0,0412 \times t$
Apparent N.P.D. of Sun's center......	$71 . \ 0 . 46,70 + f + 0,0058 \times m' - 0,0098 \times t$
Moon's Apparent Semidiameter.........	$14 . 55,55 \times \left(1 + \frac{n}{1000}\right)$

Apparent Distance of Centers of Sun and Moon, or Sum of Apparent Semidiameters

$$= 30' . 48'',77 + 0'',8718 \times \{+ x - e + 0,4633 \times t - 2,0032 \times m + 0,0052 \times m'\}$$

$$- 0,3845 \times \{y - 0,1624 \times t + 2,1978 \times m\}$$

$$+ 0,3871 \times \{f - 0,0098 \times t + 0,0058 \times m'\}.$$

Final Equation:

$$- 3,36 = + 0,8718 \times x - 0,3845 \times y - 0,8718 \times e + 0,3871 \times f + 0,4700 \times t - 2,5915 \times m$$

$$+ 0,0068 \times m' - 0,8956 \times n - 0,9499 \times n'.$$

In the above Calculations of the Occultations and of the beginning and end of the Eclipse, no Corrections have been applied for Refraction.

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Observatory.
Astronomical observations.